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Pacific Gas and Electric Company®

Power Generation

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Oakland, CA 94612

Mailing Address:
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March 4, 2026

Via U.S. Postal Service

Debbie-Anne Reese, Secretary
Federal Energy Regulatory Commission
Division of Hydropower Administration and Compliance
888 First Street, NE
Washington, D.C. 20426

RE: DeSabla-Centerville Hydroelectric Project, FERC No. 803-124
Butte Creek Foothill Yellow-Legged Frog Monitoring 2025 Technical Report

Dear Secretary Reese:

This letter presents the *Butte Creek Foothill Yellow-legged Frog Monitoring 2025 Technical Report* to the Federal Energy Regulatory Commission's (FERC) for Pacific Gas and Electric Company's (PG&E) DeSabla-Centerville Hydroelectric Project, FERC No. 803. On August 15, 2025, FERC approved the *Foothill Yellow-legged Frog Study Plan: Butte Creek 2025-2028*. Pursuant to FERC's August 15, 2025, Order, PG&E provided a draft report to the California Department of Fish and Wildlife (CDFW) and the United States Fish and Wildlife Service (USFWS) by email on January 22, 2025. On February 19, 2026, comments were received from the USFWS, and CDFW requested a time extension until February 27,2026 to comment on the report. On February 19,2026, PG&E requested that CDFW provide comments by February 25, 2026, to be incorporated in the consultation record associated with the report. PG&E received no comments from CDFW.

PG&E is submitting this hard-copy package as a refile of the Annual Foothill Yellow-Legged Frog (FYLF) Monitoring Report. On March 2, 2026, PG&E electronically filed the cover letter and Enclosures 2 and 3; however, a technical issue within FERC's eLibrary prevented upload of Enclosure 1 despite multiple troubleshooting efforts. PG&E promptly notified FERC and contacted FERC Online Support, but the issue remains unresolved. Consistent with FERC staff guidance, PG&E is refiling the complete package via hard copy, and this submission replaces the prior partial electronic filing.

The *Butte Creek Foothill Yellow-legged Frog Monitoring 2025 Technical Report* dated March 2026 is provided as (Enclosure 1). The comment and response matrix is provided as (Enclosure 2). Documentation for Agency consultation is submitted as (Enclosure 3). Documentation on the technical issue and related FERC communication is included as (Enclosure 4).

If you have questions or comments regarding this matter, please contact Duncan Drummond, license coordinator for PG&E, at (530) 215-9678

Sincerely,

S. Ramirez-Doble

Sky Ramirez-Doble
Senior License Coordinator

Enclosures:
1. Butte Creek Foothill Yellow-legged Frog Monitoring 2025 Technical Report
2. Comment and Response Matrix
3. Documentation of Agency Consultation
4. Documentation of Technical Issue Communication with FERC

ENCLOSURE 1

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PACIFIC GAS AND ELECTRIC COMPANY

Butte Creek Foothill Yellow-legged Frog Monitoring 2025 Technical Report

March 2026

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PACIFIC GAS AND ELECTRIC COMPANY

Butte Creek Foothill Yellow-legged Frog Monitoring 2025

TECHNICAL REPORT

March 2026

Citation:
Pacific Gas and Electric Company. 2026. *Butte Creek Foothill Yellow-legged Frog Monitoring 2025*. March 2026. Oakland, CA. Prepared by Stillwater Sciences, Berkeley, CA.

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LIST OF ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius
CDFW	California Department of Fish and Wildlife
cfs	cubic feet per second
GPS	global positioning system
FERC	Federal Energy Regulatory Commission
FYLF	foothill yellow-legged frog
m	meter
PG&E	Pacific Gas and Electric Company
Study Plan	*Foothill Yellow-legged Frog Study Plan: Butte Creek 2025–2028*
SUL	snout-urostyle length
USFWS	U.S. Fish and Wildlife Service
UTM	Universal Transverse Mercator
VES	visual encounter survey
WBFR	West Branch Feather River
YOY	young-of-year

EXECUTIVE SUMMARY

This report describes the results of the 2025 monitoring program for foothill yellow-legged frog (FYLF; *Rana boylii*) on Butte Creek and the West Branch Feather River (WBFR), conducted by Pacific Gas and Electric Company and Stillwater Sciences. The monitoring was initiated in response to the Butte Canal breach and associated debris flow that occurred in August 2023, which introduced sediment into Butte Creek and raised concerns about potential impacts on aquatic habitats and sensitive species.

Surveys were conducted from May through September 2025 at eight representative sites on Butte Creek and two control sites on the WBFR. The study employed visual encounter surveys and habitat assessments, building on previous efforts in 2023 and 2024, and referencing historical data from the 2006 relicensing studies (PG&E 2008). The 2025 effort expanded the spatial scope and incorporated early-season egg mass surveys to better capture breeding activity and recruitment success.

Key findings indicate that a robust FYLF population persists in Butte Creek, defined here as supporting all life stages as well as breeding and recruitment across most sites with a substantial number of egg masses observed. Biologist observed all life stages—egg masses, tadpoles, young-of-year (YOY), subadults, and adults—in Butte Creek, as well as successful breeding and recruitment at six of the eight sites. A total of 103 individual egg masses were documented across all Butte Creek sites (including larvae clusters observed during the first survey of the year that indicated a recently hatched egg mass).

The WBFR control sites provided useful context. While the WBFR sites had higher numbers of YOY, subadults, and adults in 2025, Butte Creek sites exhibited greater tadpole and egg mass counts at certain locations. These patterns likely reflect a combination of habitat quality, hydrologic conditions, and the influence of non-native predators such as bullfrogs, which remain absent from the WBFR but have expanded their range upstream in Butte Creek.

Overall, the preliminary study results to date do not suggest a declining or unstable FYLF population in Butte Creek, with no current indication of long-term population-level impacts attributable to the 2023 canal breach, recognizing that continued annual monitoring is required to evaluate potential delayed effects. Demographic variability and abundance trends across 2024–2025 show no discernible population declines, and adult and egg mass numbers in 2025 generally exceeded those observed in 2024 and 2006. Continued annual monitoring, including comparison with control sites and historical data, will be useful for detecting any delayed effects and informing whether adaptive management strategies are needed.

1.0 Background

On August 10, 2023, Butte Canal, part of Pacific Gas and Electric Company's (PG&E's) DeSabla-Centerville Hydroelectric Project (Federal Energy Regulatory Commission Project [FERC] No. 803), breached. Seepage through the bottom of the canal resulted in the erosion of upland areas between the canal and the Butte Creek channel, and water and debris flowed several hundred feet downhill into Butte Creek. The flow eroded the berm and hillside and deposited sediment and debris into one location in the creek. A sediment plume travelled downstream, throughout Butte Creek, leaving erosional deposits in the slow edgewater margins of the creek.

PG&E and Stillwater Sciences initiated a foothill yellow-legged frog (FYLF; *Rana boylii*) study in fall 2023 to attempt to determine the existing status of recruitment of young-of-year (YOY) FYLF in Butte Creek and assess any injury to or effects on FYLF that may have resulted from the Butte Canal breach (PG&E and Stillwater Sciences 2023). The 2023 study included conducting visual encounter surveys (VESs) and habitat assessments at three survey sites (BC-4, BC-6, and BC-12) in September and October 2023.

In 2024, PG&E expanded the FYLF study to conduct four VESs and habitat assessments at 2023 sites and three additional sites along Butte Creek (BC-3, BC-7, and BC-8) to determine the status of reproduction and recruitment, and coarsely compare current distribution and numbers to historical baseline data (i.e., from the 2006 relicensing study [PG&E 2025a]).

On November 19, 2024, FERC issued a letter requiring PG&E to coordinate with the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) to conduct an ongoing FYLF population assessment to compare with the 2006 monitoring effort (which represented pre-failure conditions). This included developing a plan for additional FYLF monitoring in Butte Creek and providing contingency for mitigation to the Butte Creek FYLF population if monitoring confirms a significant loss of FYLF from the 2023 failure and associated sediment release. On May 19, 2025, PG&E filed the *Foothill Yellow-legged Frog Study Plan: Butte Creek 2025–2028* (Study Plan; PG&E 2025b) with FERC. On August 15, 2025, FERC approved the Study Plan, including requiring that PG&E develop an annual technical monitoring report by January 31 of the year following each monitoring season to provide details about the survey results, a discussion of the habitat assessments, and a comparison of the results with 2006 survey data to determine the effects of the failure on FYLF. The final report under the Study Plan, due to FERC by March 1, 2029, should identify any future mitigation activities, if warranted, and a plan and schedule for completing the mitigation, as well as documentation of agency concurrence in its filing.

In 2025, through coordination with USFWS and CDFW and pursuant to the proposed Study Plan (filed with FERC on May 19, 2025), PG&E further expanded the FYLF study to better assess the population and degree of potential effects of the Butte Canal breach on FYLF in Butte Creek. Two more sites were added on Butte Creek—BC-1 and BC-2—as well as two sites on the nearby West Branch Feather River (WBFR) (WBFR-1 and WBFR 2). More early season egg mass surveys were incorporated to better assess the timing and success of breeding onset. The WBFR, which was not impacted by the canal breach, was included as a control to compare against breeding and

recruitment in Butte Creek. The WBFR sites, which were also surveyed as part of relicensing studies performed in 2006, have similar habitat conditions to Butte Creek sites and had observations of all FYLF life stages during 2006 surveys (PG&E 2008).

In accordance with FERC reporting requirements, this document describes 2025 survey methods and results, including habitat assessments and transects, and discusses the results of preliminary data analyses and high-level comparisons of the 2023, 2024, and 2025 survey results with the 2006 relicensing study data to inform the assessment of potential long-term impacts of 2023 sediment inputs into Butte Creek. This document also includes an evaluation of any apparent significant loss of the FYLF population that may have occurred during the respective year of surveys as well as comprehensively for all survey years.

2.0 Monitoring Area

The 2025 Butte Creek monitoring area included safely accessible portions of eight sites located downstream of the sediment deposition area across three reaches (Table 2-1, Figure 2-1). These sites are located on PG&E, U.S. Bureau of Land Management, CDFW, Mechoopda Indian Tribe of Chico Rancheria, and private lands in Butte County. All eight sites were surveyed in 2006 during the DeSabla-Centerville relicensing study. Six of these sites (BC-3 to BC-12) were surveyed for FYLF during 2024 surveys, with tadpoles and post-metamorphic frogs observed at each. Sites BC-1 and BC-2 were excluded from the 2024 monitoring area because no FYLF egg masses or tadpoles were observed at those sites during the 2006 relicensing studies, but were added as survey sites for 2025 at the request of CDFW and USFWS. To avoid areas with unsafe access and/or unsuitable habitat (e.g., long, deep runs or pools), the survey length of Site BC-8 was reduced by half as compared with 2006, and sites BC-1, BC-4, BC-7, and BC-12 show minor differences from 2006 site lengths, presumably because of variations in surveyable site conditions, methodology for measuring site lengths, or both. Lengths were consistent for all sites between 2024 and 2025 surveys.

The 2025 West Branch Feather River monitoring area included two survey sites located on Plumas National Forest, U.S. Bureau of Land Management, and private lands in Butte County. These two sites were last surveyed during 2006 relicensing studies (PG&E 2008).

Table 2-1. Butte Creek and West Branch Feather River foothill yellow-legged frog survey sites, 2025.

Reach	Site	Site Length[a] 2025 (miles)	UTM Coordinates[b]			
			Downstream End		Upstream End	
			Northing	Easting	Northing	Easting
Centerville Powerhouse	BC-1	1.7	4396326	607203	4396545	609291
	BC-2	1.1	4396661	609334	4397382	610205
	BC-3	0.3	4397754	610437	4398155	610735
	BC-4	0.6	4403283	614081	4403855	614349
DeSabla Powerhouse	BC-6	0.3	4406436	614657	4406726	614927
	BC-7	0.4	4407946	615523	4408687	615719
	BC-8	0.5	4409779	615827	4410575	615801
Forks of Butte Diversion Dam area	BC-12	1.1	4417857	617784	4419247	618446
Upstream of Miocene Diversion	WBFR-1	0.3	4408139	622332	4408521	622297
At Jordan Hill Road Bridge	WBFR-2	0.3	4409187	622482	4409682	622577

[a] Site lengths were calculated in geographic information systems (GIS) and rounded to the nearest tenth of a mile (coordinate system: NAD83 UTM Zone 10 North); site lengths may differ from those reported from 2006 studies (PG&E 2008) because of variations in surveyable site conditions, methodology for measuring site lengths, or a combination of both.

[b] UTM = Universal Transverse Mercator; Coordinate System: NAD83 UTM Zone 10 North, N = Northing, E = Easting

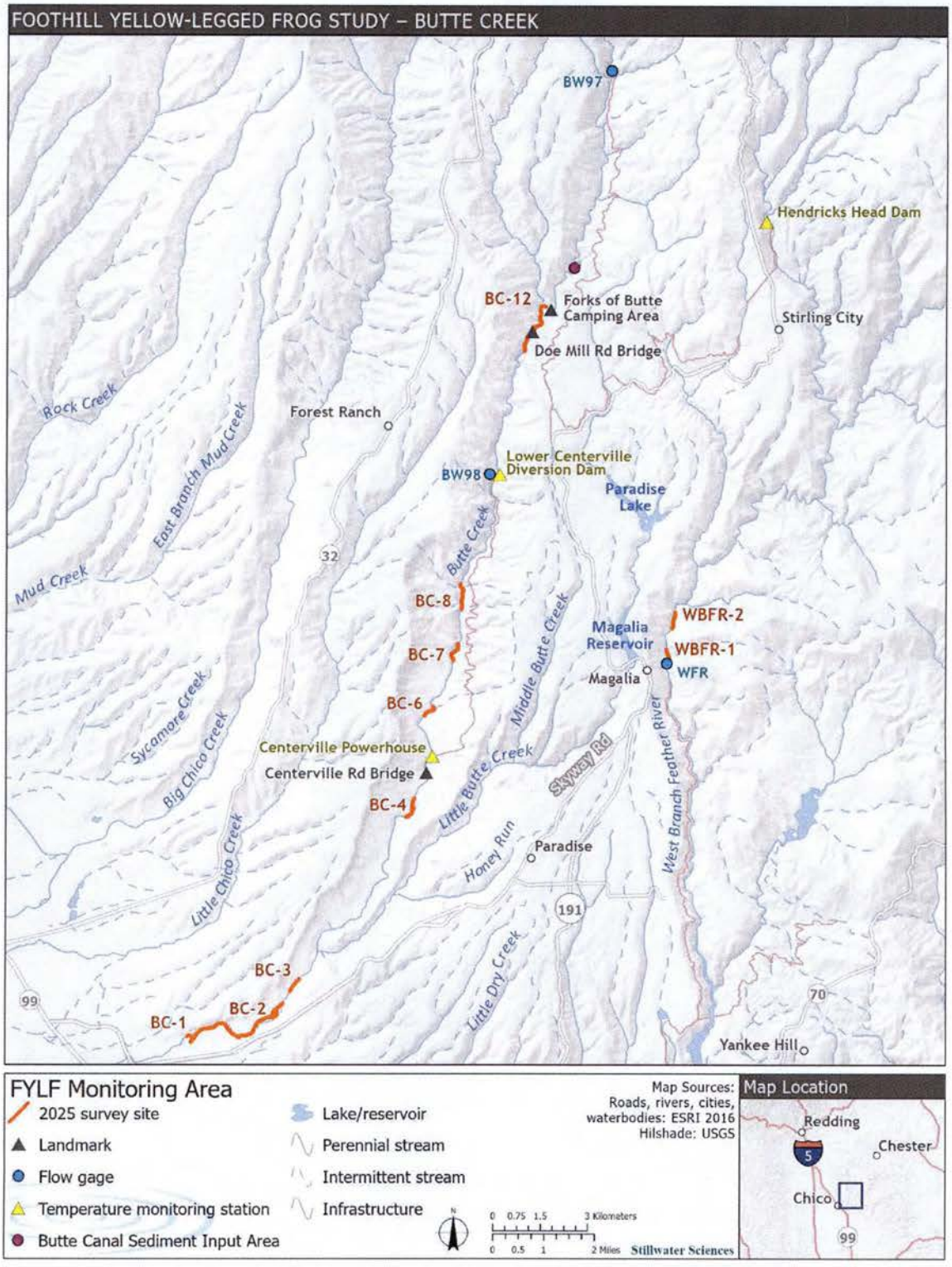

Figure 2-1. Butte Creek and West Branch Feather River foothill yellow-legged frog monitoring area, 2025.

3.0 Methods

Population monitoring and habitat assessments were conducted in all safely accessible and permissible areas at each site, as described in the Study Plan (PG&E 2025b) and based on procedures described in PG&E's monitoring protocol titled *A Standardized Approach for Habitat Assessments and Visual Encounter Surveys for the Foothill Yellow-legged Frog (Rana boylii)* (Seltenrich and Pool 2002, as previously revised). In addition to FYLF, surveyors recorded all other aquatic herpetofauna (amphibians and reptiles) and any potential predators observed.

3.1 Visual Encounter Surveys

Teams of two to three surveyors performed four to six sets of VESs at each site. Each survey targeted the following specific FYLF life stages:

- Two to four May and June surveys targeting egg masses,
- One late August survey targeting tadpoles, and
- One final mid-September survey targeting YOY.

Four sets of egg mass surveys were conducted at the lowest sites in the reach (BC-2, BC-3, BC-4, and BC-6) because access was feasible during higher flows in early May. Sites BC-1 and WBFR-2 were also surveyed during early May, but high flows restricted access to only portions of these sites. High flows in early May prevented safe access to remaining sites. Additionally, a road washout prevented early season access to Site BC-8 until June 3.

Surveys were conducted by teams of two to three surveyors working in tandem to maximize coverage of potential breeding habitat. During egg mass surveys, one surveyor snorkeled suitable habitat, as safe and feasible. Data collection for FYLF observations included location, life stage, Gosner (1960) stage (where applicable), total length (for tadpoles), depth at observation (for egg masses and tadpoles), perch or attachment substrate, snout-urostyle length (SUL) (for post-metamorphs), sex (if observable), body condition (e.g., emaciated, injured), dominant riparian type at observation, geomorphic unit type (e.g., riffle, run, pool, side channel) at observation, nearest bank, as well as Universal Transverse Mercator (UTM) coordinates (recorded using tablets equipped with a global positioning system [GPS]). Sex determinations for adult frogs were made in the field based on presence of observable secondary sexual characteristics (e.g., nuptial pads). A frog was characterized as an adult if it measured at least 40 millimeters SUL, or smaller but with apparent secondary sexual characteristics. Groupings of multiple individuals—most commonly tadpoles and YOY—were recorded as an approximate range in meters (m) from an initial GPS waypoint.

3.2 Habitat Assessments and Transects

At the end of each survey, general FYLF habitat quality was assessed for the survey site and the following additional information was recorded: air and mid-channel water temperatures; presence of fish, predators, or other aquatic herpetofauna observed; and observable anthropogenic disturbance (i.e., mining, recreation). Photographs were taken of the survey start and end points at the downstream and upstream ends of the site as well as representative habitat throughout the site. At the end of the September survey at each site, surveyors additionally characterized the general habitat across the survey reach by recording the following: geomorphic unit type(s), aquatic substrate composition, vegetation types, percent aquatic cover, percent riparian canopy cover, stream gradient, turbidity, water color, and descriptions of any evidence of mining or recreation observed.

To compare potential observable changes in habitat suitability across years (e.g., vegetation encroachment affecting breeding suitability), surveyors conducted finer-scale habitat assessments across one transect per survey site. Previously established transects were re-assessed at the six sites surveyed in 2024, and new transects were established at the four sites added in 2025. New transects were established in suitable breeding habitat and, where feasible, in areas with high concentrations of observed egg masses, tadpoles, and/or YOY FYLF. The following physical characteristics were measured or estimated across each transect: thalweg and edgewater temperatures; geomorphic unit type(s); aquatic substrate composition and substrate embeddedness; wetted width and bankfull width (measured with a rangefinder); turbidity (visual assessment); stream gradient; upland habitat type; presence of aquatic cover and dominant type; percent riparian canopy; dominant canopy species; and percent margin, emergent, and submerged vegetation by type. Active erosion and any anthropogenic impacts on amphibian habitat present adjacent to the transect were also noted. Photographs were taken of each transect from both banks looking toward the middle of the channel, and from mid-channel looking both upstream and downstream.

4.0 Results

4.1 Visual Encounter Surveys

Results of 2025 surveys are provided below for FYLF and for non-target herpetofauna.

4.1.1 Foothill Yellow-legged Frog

Biologists conducted VESs on May 5–7, May 19–22, June 2–5, June 16–19, August 25–28, and September 22–26, 2025. Surveys were conducted during favorable weather conditions for amphibian detection (e.g., clear, sunny to partly cloudy skies, minimal wind). General survey condition data are summarized in Table 4-1. Flow and water temperature data from the nearest associated monitoring stations are plotted in Appendix A.

Table 4-1. Butte Creek and West Branch Feather River foothill yellow-legged frog visual encounter survey data, 2025.

Site	Survey Date (2025)	Survey Time (HH:MM)		Flow (cfs)[a]	Air Temperature (°C)		Water Temperature (°C)	
		Start	End	Mean	Start	End	Start	End
BC-1	05/07[b]	09:28	11:46	293	20.3	21.7	12.9	14.3
	05/21	09:04	15:30	254	17.0	28.0	14.0	16.5
	06/04	09:15	13:31	216	25.0	32.1	18.1	21.8
	06/18	09:19	13:22	195	21.0	31.5	16.9	19.6
	08/27	09:33	14:02	139	26.4	31.0	20.0	22.8
	09/24	09:14	13:24	114	24.0	29.2	16.9	19.3
BC-2	05/06	11:34	16:13	301	27.0	27.8	13.6	15.9
	05/19	15:06	18:24	265	29.4	27.1	16.9	16.9
	06/04	14:05	17:19	216	31.8	33.2	20.7	22.1
	06/18	14:13	16:54	195	30.3	28.9	21.0	21.2
	08/27	14:31	17:28	139	31.3	32.5	23.6	24.1
	09/24	14:20	17:44	114	28.4	27.8	19.6	19.3
BC-3	05/06	16:47	18:04	301	24.3	26.8	16.1	15.9
	05/21	09:15	11:50	254	20.2	23.7	14.1	14.1
	06/05	10:20	11:34	211	26.4	24.8	17.8	17.7
	06/19	10:10	11:13	191	25.4	25.4	18.4	18.0
	08/28	09:23	10:53	134	25.1	24.5	19.0	19.1
	09/22	15:36	17:55	117	34.5	34.8	21.2	20.8

Site	Survey Date (2025)	Survey Time (HH:MM)		Flow (cfs)[a]	Air Temperature (°C)		Water Temperature (°C)	
		Start	End	Mean	Start	End	Start	End
BC-4	05/05	17:36	19:30	315	25.7	19.5	14.1	13.3
	05/19	15:54	17:51	265	29.1	27.6	15.0	--
	06/05	10:46	12:28	211	26.9	27.1	16.8	17.2
	06/19	10:49	12:46	191	27.0	28.0	17.0	18.0
	08/28	10:04	12:10	134	26.2	30.2	18.2	19.1
	09/25	09:47	13:07	115	24.0	27.1	15.5	16.5
BC-6	05/07	13:09	14:12	293	24.1	25.6	13.4	13.8
	05/21	13:51	16:47	254	28.0	24.5	14.1	14.5
	06/04	15:04	16:14	216	31.1	21.5	18.2	18.1
	06/18	09:27	11:36	195	24.1	28.3	16.1	16.9
	08/27	14:43	16:18	139	31.3	29.1	20.5	20.8
	09/24	16:04	17:48	114	28.7	22.5	18.3	18.0
BC-7	05/20	10:56	15:24	260	25.0	25.2	13.0	14.8
	06/04	10:01	13:22	216	21.5	21.5	15.6	16.9
	06/18	13:23	17:27	195	31.1	28.7	17.0	18.1
	08/27	10:08	12:45	139	25.2	30.2	18.0	19.2
	09/24	10:16	14:11	114	23.0	30.1	15.0	16.6
BC-8[c]	06/03	10:25	16:57	217	23.5	21.2	15.3	17.0
	06/17	09:42	15:10	201	24.0	28.0	13.4	16.2
	08/26	10:09	15:14	137	21.4	29.0	18.2	19.1
	09/23	10:16	16:45	115	21.3	27.1	15.0	17.8
BC-12	05/20	10:02	17:45	154	17.1	21.5	11.0	13.0
	06/03	11:21	16:40	112	26.3	25.7	15.4	17.4
	06/17	10:03	16:49	86	20.6	27.5	12.6	16.2
	08/26	09:50	15:32	63	20.0	27.9	17.0	18.0
	09/23	10:14	15:44	61	16.3	28.0	12.7	13.5
WBFR-1	05/22	10:35	11:52	366	22.0	22.2	11.6	12.1
	06/02	15:27	16:59	259	31.7	28.1	18.1	19.4
	06/16	14:51	17:25	93	27.5	24.5	17.8	18.1
	08/25	15:37	18:24	30	32.3	27.4	23.8	23.2
	09/26	09:21	11:57	27	16.3	29.1	16.8	16.6

Site	Survey Date (2025)	Survey Time (HH:MM)		Flow (cfs)[a]	Air Temperature (°C)		Water Temperature (°C)	
		Start	End	Mean	Start	End	Start	End
WBFR-2	05/07[b]	17:43	18:46	529	21.1	20.8	12.3	12.2
	05/22	10:21	12:53	366	22.0	22.0	12.0	12.0
	06/02	15:45	20:18	259	30.9	19.5	18.1	17.8
	06/16	14:46	17:38	93	30.0	22.2	17.7	17.7
	08/25	15:32	18:47	30	36.1	30.5	22.9	21.9
	09/25	09:27	16:20	27	21.8	24.3	16.2	17.8

Notes: -- = no data recorded; °C = degrees Celsius; cfs = cubic feet per second, HH:MM = time of day shown in 24-hour format

[a] Flow data are presented as a daily average. Flow data for Butte Creek are from PG&E Gage BW97 (for Site BC-12) and Gage BW98 (for the other Butte Creek sites) (Figure 2-1); accuracy may be fair to poor for flow values between 150 and 300 cfs. Flow data for the WBFR is from the California Department of Water Resources gage at the WBFR near Magalia, Station ID WFR, located near the Miocene Dam.

[b] Incomplete survey due to access limitations from early season high flows.

[c] Site BC-8 was not surveyed during May 19–22 surveys due to inaccessible road conditions.

Surveyors found FYLF at all 10 survey sites during the 2025 surveys. The numbers of individuals observed by life stage and sex are provided in Tables 4-2 and 4-3, respectively, and locations of FYLF observations are depicted on maps in Figures 4-1 through 4-10. Representative photographs of FYLF egg masses, tadpoles, and post-metamorphic individuals are provided in Figures 4-11 through 4-16.

Table 4-2. Number of foothill yellow-legged frogs observed by life stage during surveys on Butte Creek and the West Branch Feather River, 2025.

Site	Life Stage	Number Observed						
		Visit 1 (5/5–5/7)	Visit 2 (5/19–5/22)	Visit 3 (6/2–6/5)	Visit 4 (6/16–6/19)	Visit 5 (8/25–8/28)	Visit 6 (9/22–9/26)	Total[a]
BC-1	Egg mass	0	0	0	0	0	0	0
	Tadpole	0	0	0	0	0	0	0
	YOY	0	0	0	0	0	0	0
	Subadult	0	1	0	0	0	0	1
	Adult	0	0	0	0	0	0	0
BC-2	Egg mass	0	0	0	0	0	0	0
	Tadpole	0	0	~650	~75	1	0	~726
	YOY	0	0	0	0	20	44	64
	Subadult	6	0	6	6	1	4	23
	Adult	3	0	1	3	0	1	8
BC-3	Egg mass	0	0	0	0	0	0	0
	Tadpole	0	0	0	0	0	0	0
	YOY	0	0	0	0	5	8	13
	Subadult	0	0	0	0	0	10	10
	Adult	2	1	2	1	0	0	6
BC-4	Egg mass	0	0	0	0	0	0	0
	Tadpole	0	0	30	~100	0	0	~130
	YOY	0	0	0	0	~109	11	~120
	Subadult	1	0	0	0	0	2	3
	Adult	2	2	1	1	0	0	6
BC-6	Egg mass	0	1	0	0	0	0	1 (1)[a]
	Tadpole	0	0	10	0	0	0	10
	YOY	0	0	0	0	9	1	10
	Subadult	0	0	0	0	0	0	0
	Adult	0	3	1	0	1	0	5
BC-7	Egg mass	--	27 [+42][b]	0	0	0	0	69 (69) [a,b]
	Tadpole	--	~15,720	~12,391	~3,765	~503	6	~32,385
	YOY	--	0	0	0	4	17	21
	Subadult	--	2	4	0	1	2	9
	Adult	--	12[c]	10	13	5	14	54

Site	Life Stage	Number Observed						
		Visit 1 (5/5–5/7)	Visit 2 (5/19–5/22)	Visit 3 (6/2–6/5)	Visit 4 (6/16–6/19)	Visit 5 (8/25–8/28)	Visit 6 (9/22–9/26)	Total[a]
BC-8	Egg mass	--	--	5 [+18][d]	0	0	0	23 (23)[a,d]
	Tadpole	--	--	~4,795	~2,771	~275	0	~7,841
	YOY	--	--	0	0	73	~114	~187
	Subadult	--	--	3	0	0	0	3
	Adult	--	--	3	2	3	4	12
BC-12	Egg mass	--	7	2	2	0	0	11 (10)[a]
	Tadpole	--	0	~1,000	~2,235	6	1	~3,242
	YOY	--	0	0	0	4	17	21
	Subadult	--	2	0	1	1	1	5
	Adult	--	7	6[e]	5	6	1	25
WBFR-1	Egg mass	--	0	5	3	0	0	8 (8)[a]
	Tadpole	--	0	0	~600	67[f]	3	~670
	YOY	--	0	0	0	64[g]	~559	~623
	Subadult	--	1	2	10	5	1	19
	Adult	--	0	3	2	0	4	9
WBFR-2	Egg mass	0	3	38[h]	1	0	0	42 (39)[a]
	Tadpole	0	0	0	~2,425	~184	38	~2,647
	YOY	0	0	0	0	~96	~677[i]	~773
	Subadult	5	12	15	12	29	12	85
	Adult	5	11	17	5	23	66	127

Notes: ~ = approximately; -- = no data (not surveyed); YOY = young-of-year

[a] Because the same individuals may have been observed on separate visits, totals may exceed the true number of individuals present; however, exact counts are known for egg masses and provided in parentheses.

[b] Of the 27 unhatched egg masses observed, one was in the mainstem, and 26 were in backwater pools with varying degrees of connectivity to the mainstem (most were disconnected or partially connected). An additional 42 newly hatched egg masses (observed as larvae clusters and included in tadpole counts) were also observed within these backwater pools during the first survey, and are included in the total egg mass count because they indicate known egg masses laid prior to the first survey.

[c] Of these, two frogs were found deceased during this survey (causes of mortality unknown), one of which was being consumed by a northwestern pond turtle.

[d] An additional 18 newly hatched egg masses (observed as larvae clusters and included in tadpole counts) were observed during the first survey. They are included in the total egg mass count because they indicate known egg masses laid prior to the first survey.

[e] Of these, one frog was found deceased during this survey (cause of mortality unknown), with an egg mass partially emerged from its cloaca.

[f] Of these, five tadpoles were found deceased during this survey (causes of mortality unknown).

[g] Of these, one YOY was found deceased during this survey (cause of mortality unknown).

[h] An additional egg mass was observed above the water line and desiccated during this survey.

[i] Of these, one YOY was found deceased during this survey (cause of mortality unknown).

Table 4-3. Number of adult foothill yellow-legged frogs observed by sex during surveys on Butte Creek and the West Branch Feather River, 2025.

Site	Sex	Number Observed						
		Visit 1 (5/5–5/7)	Visit 2 (5/19–5/22)	Visit 3 (6/2–6/5)	Visit 4 (6/16–6/19)	Visit 5 (8/25–8/28)	Visit 6 (9/22–9/26)	Total[a]
BC-1	Male	0	0	0	0	0	0	0
	Female	0	0	0	0	0	0	0
	Unknown	0	0	0	0	0	0	0
BC-2	Male	3	0	0	2	0	1	6
	Female	0	0	0	1	0	0	1
	Unknown	0	0	1	0	0	0	1
BC-3	Male	1	0	2	0	0	0	3
	Female	1	1	0	0	0	0	2
	Unknown	0	0	0	1	0	0	1
BC-4	Male	1	1	1	1	0	0	4
	Female	0	1	0	0	0	0	1
	Unknown	1	0	0	0	0	0	1
BC-6	Male	0	3	0	0	0	0	3
	Female	0	0	0	0	1	0	1
	Unknown	0	0	1	0	0	0	1
BC-7	Male	--	2	3	9	2	6	22
	Female	--	2	1	1	1	2	7
	Unknown	--	8[b]	6	3	2	6	25
BC-8	Male	--	--	1	0	0	1	2
	Female	--	--	1	0	1	3	5
	Unknown	--	--	1	2	2	0	5
BC-12	Male	--	2	2	2	2	1	9
	Female	--	4	4[c]	2	2	0	12
	Unknown	--	1	0	1	2	0	4

Site	Sex	Number Observed						
		Visit 1 (5/5–5/7)	Visit 2 (5/19–5/22)	Visit 3 (6/2–6/5)	Visit 4 (6/16–6/19)	Visit 5 (8/25–8/28)	Visit 6 (9/22–9/26)	Total[a]
WBFR-1	Male	--	0	3	2	0	3	8
	Female	--	0	0	0	0	1	1
	Unknown	--	0	0	0	0	0	0
WBFR-2	Male	4	4	5	0	3	18	34
	Female	0	2	8	1	7	17	35
	Unknown	1	5	4	4	13	31	58

[a] Because the same individuals may have been observed on separate visits, totals may exceed the true number of individuals present.

[b] Of these, two frogs were found deceased during this survey (causes of mortality unknown), one of which was being consumed by a northwestern pond turtle.

[c] Of these, one frog was found deceased during this survey (cause of mortality unknown), with an egg mass partially emerged from its cloaca.

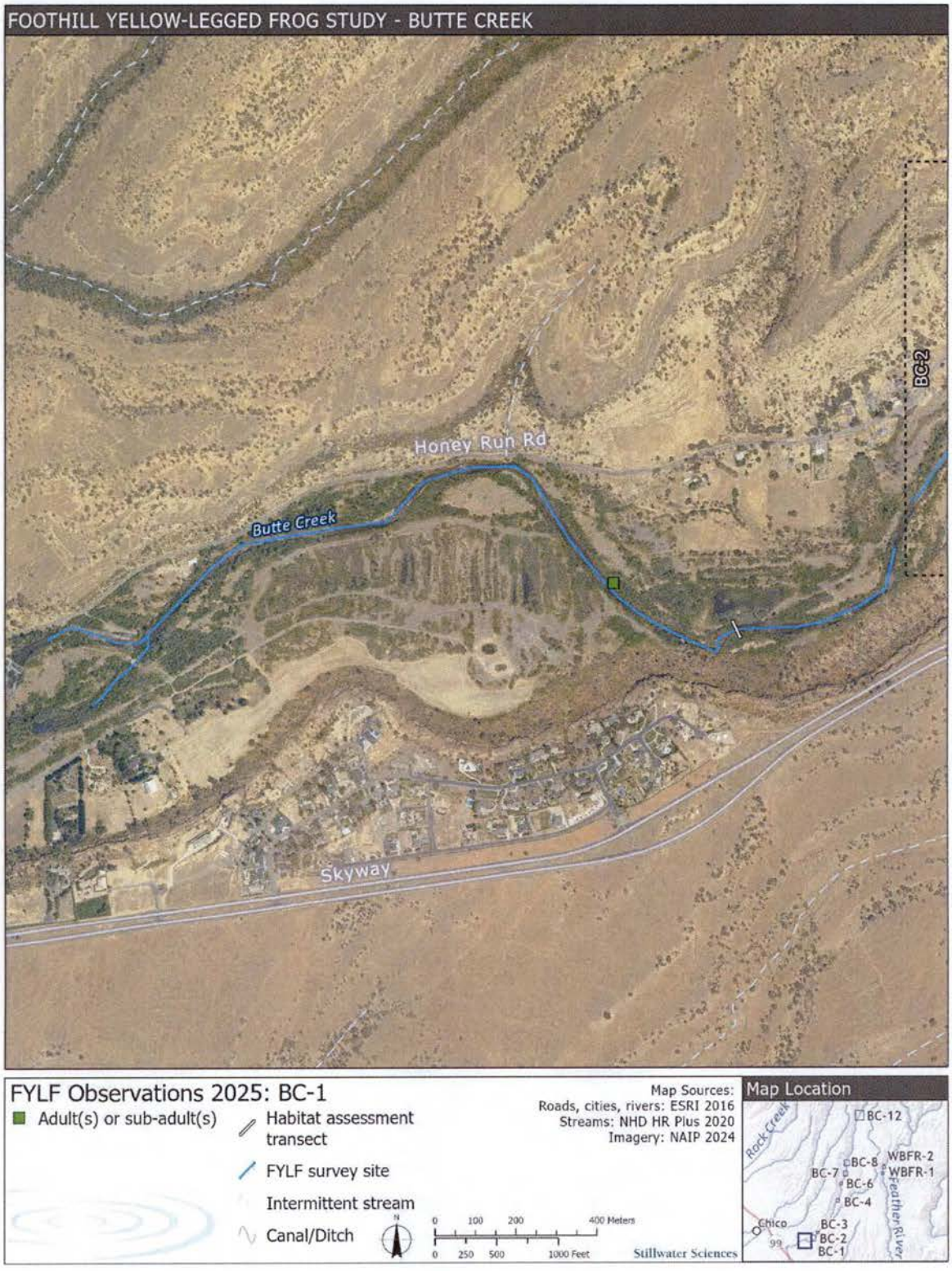

Figure 4-1. Foothill yellow-legged frog observation locations at Site BC-1, 2025.

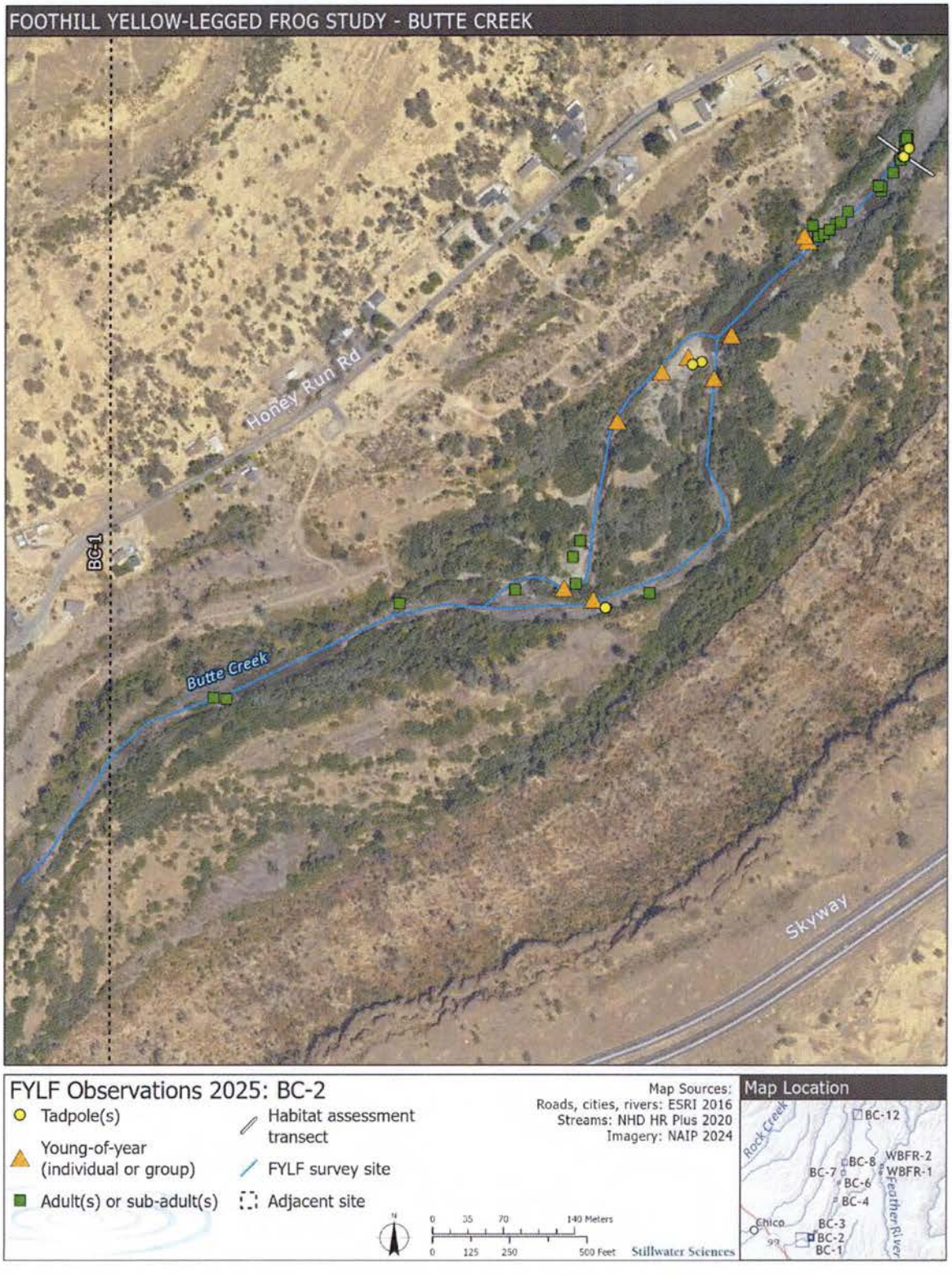

Figure 4-2. Foothill yellow-legged frog observation locations at Site BC-2, 2025.

Figure 4-3. Foothill yellow-legged frog observation locations at Site BC-3, 2025.

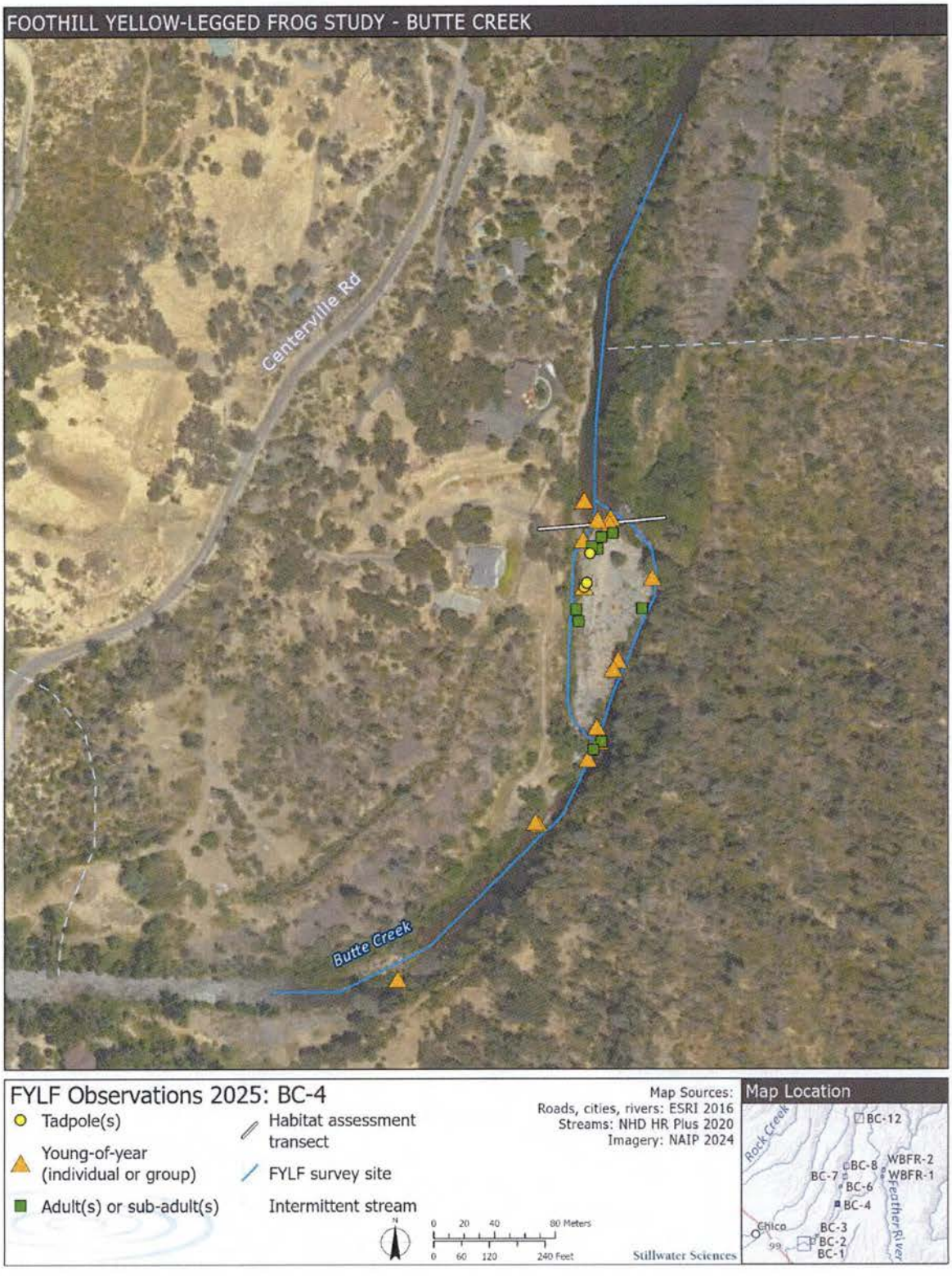

Figure 4-4. Foothill yellow-legged frog observation locations at Site BC-4, 2025.

Figure 4-5. Foothill yellow-legged frog observation locations at Site BC-6, 2025.

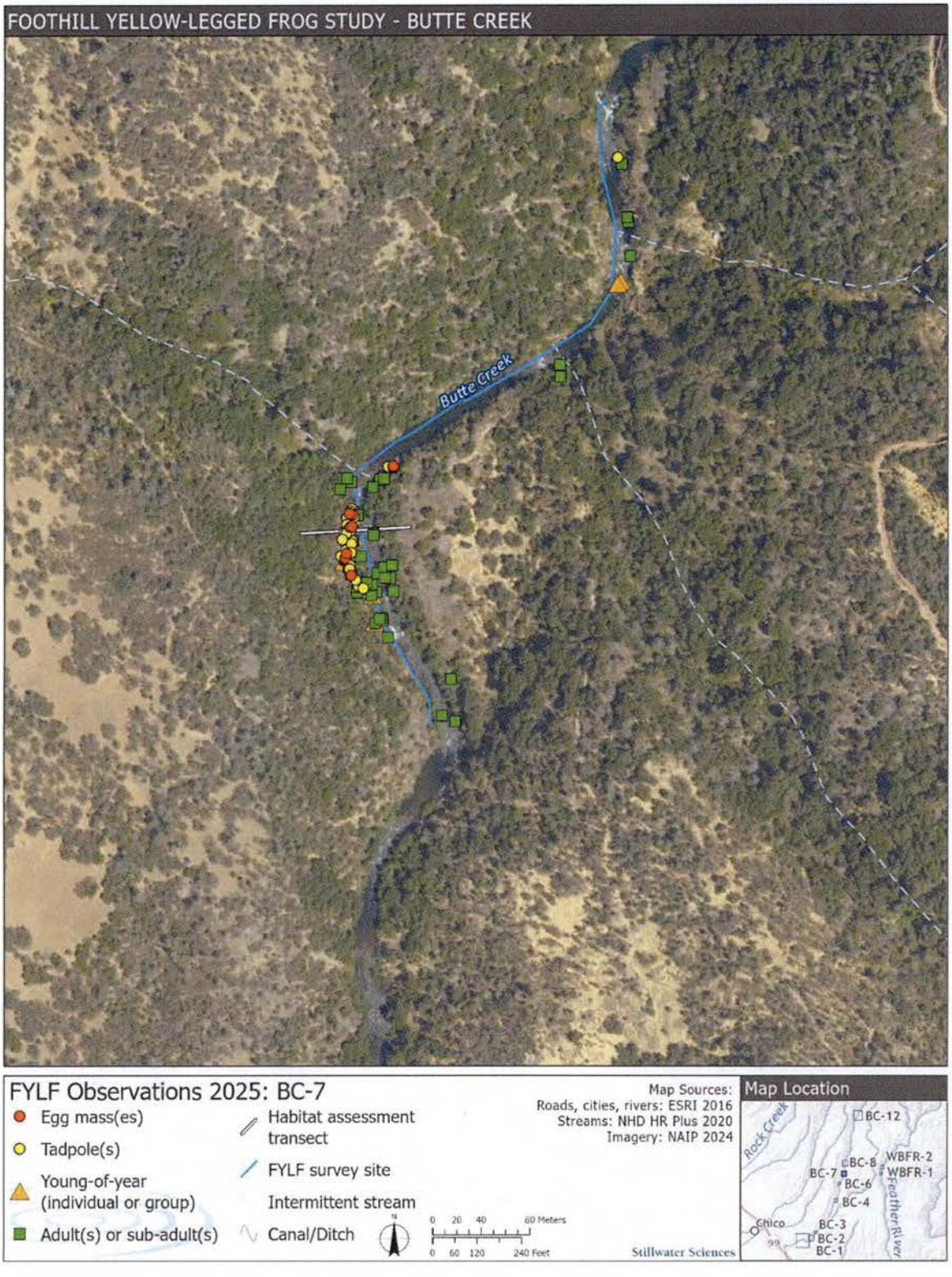

Figure 4-6. Foothill yellow-legged frog observation locations at Site BC-7, 2025.

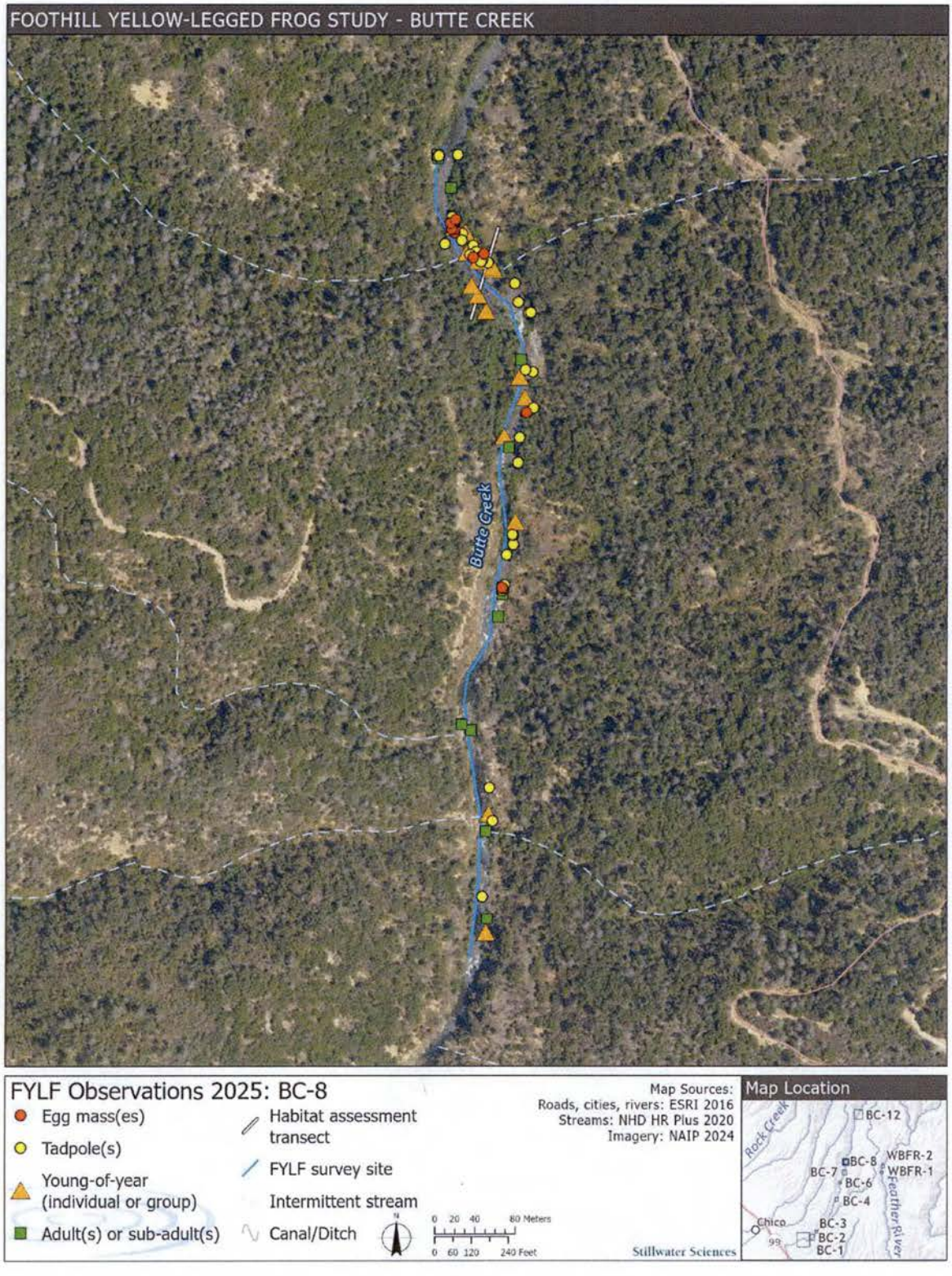

Figure 4-7. Foothill yellow-legged frog observation locations at Site BC-8, 2025.

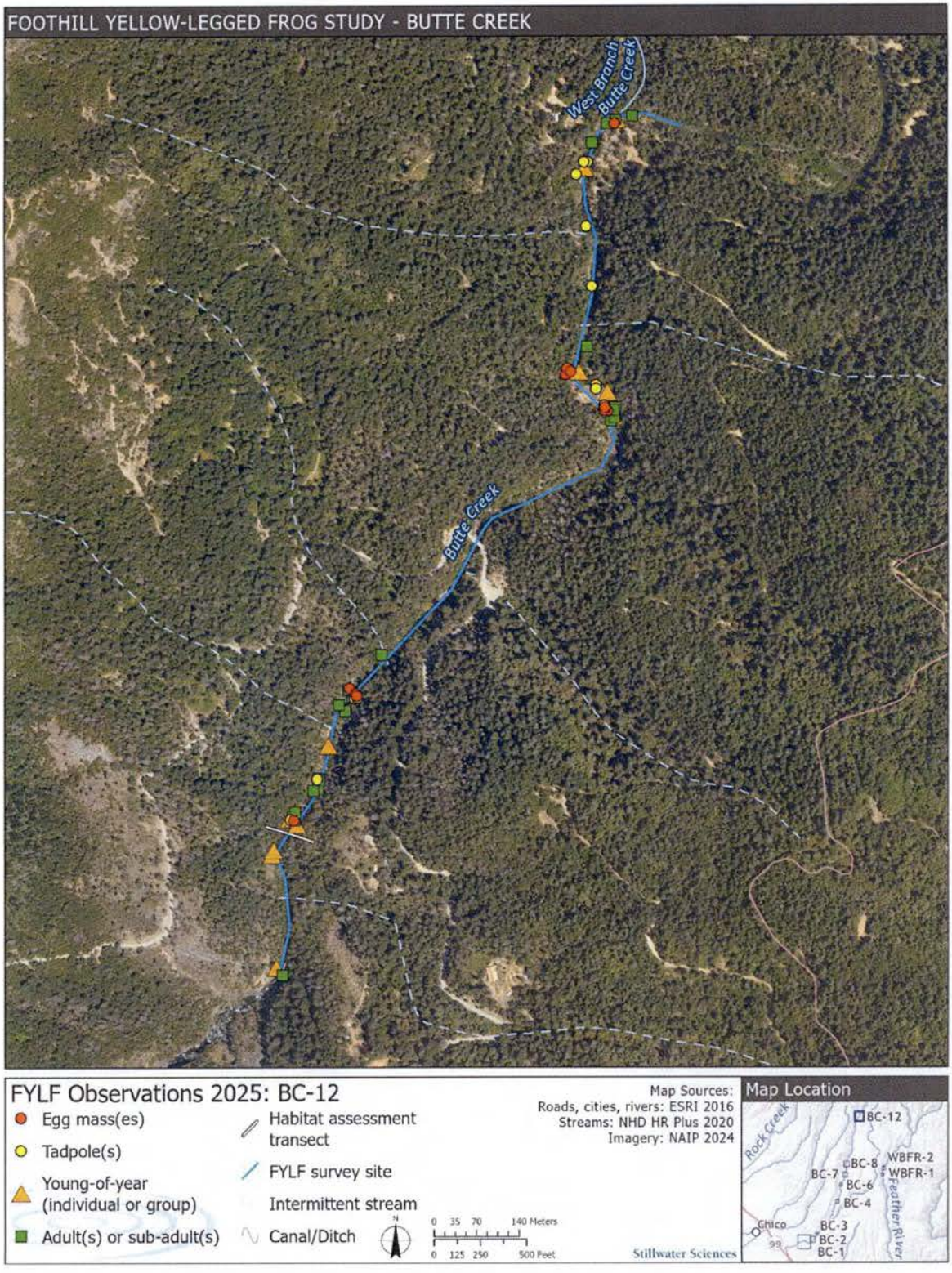

Figure 4-8. Foothill yellow-legged frog observation locations at Site BC-12, 2025.

Figure 4-9. Foothill yellow-legged frog observation locations at Site WBFR-1, 2025.

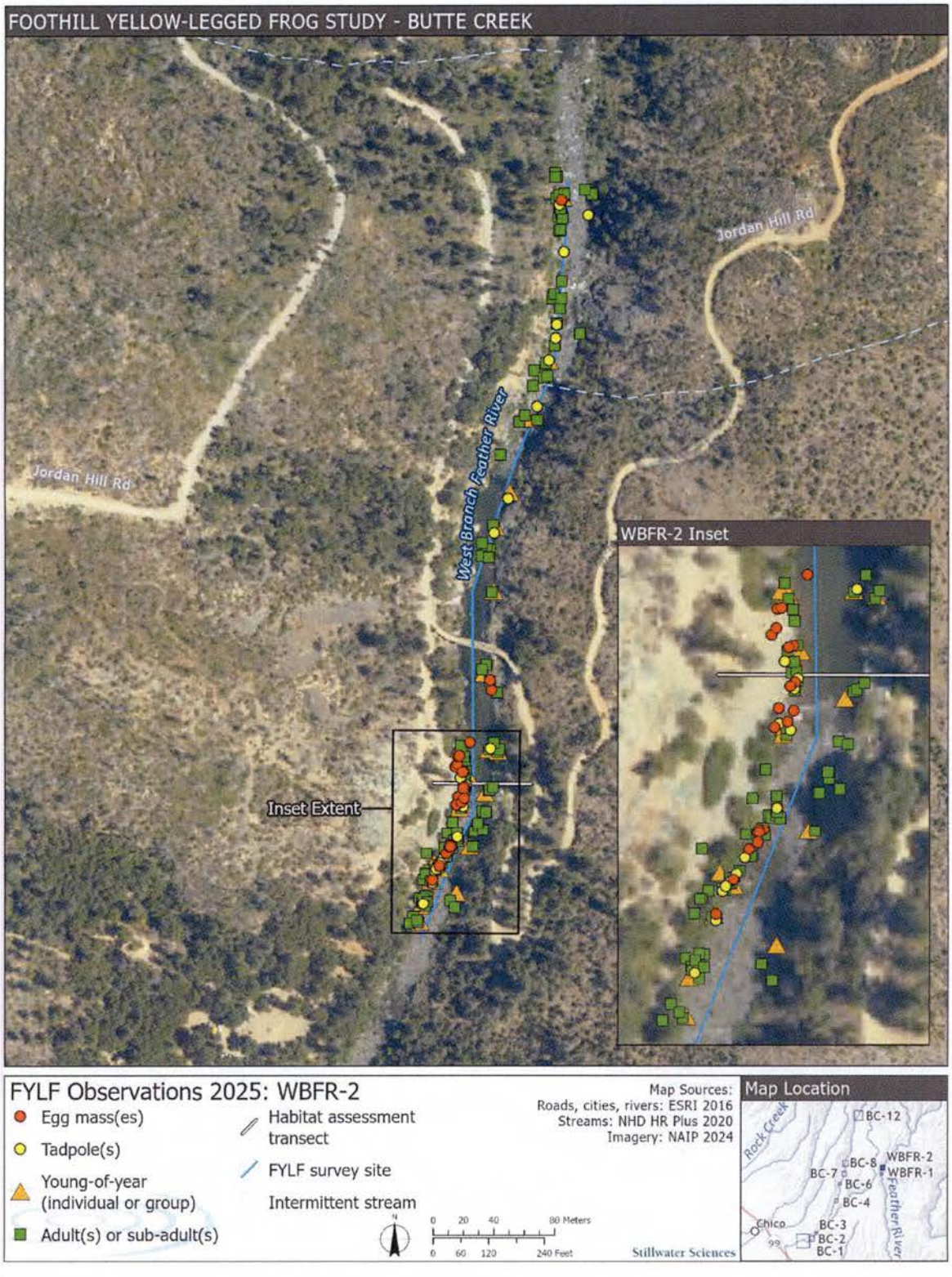

Figure 4-10. Foothill yellow-legged frog observation locations at Site WBFR-2, 2025.

Figure 4-11. Foothill yellow-legged frog egg masses observed at Site WBFR-1 on June 2 (left) and WBFR-2 on June 2 (right), 2025.

Figure 4-12. Foothill yellow-legged frog tadpoles observed at Site BC-2 on June 2 (left) and BC-12 on September 23 (right), 2025.

Figure 4-13. Young-of-year foothill yellow-legged frogs observed at Site WBFR-1 on August 25 (left) and BC-8 on August 26 (right), 2025.

Figure 4-14. Subadult foothill yellow-legged frogs observed at Site BC-7 on May 20 (left) and BC-4 on September 25 (right), 2025.

Figure 4-15. Adult foothill yellow-legged frogs observed at Site BC-2 on May 6 (left) and WBFR-2 on September 25 (right), 2025.

Figure 4-16. Gravid adult female foothill yellow-legged frogs observed at Site BC-3 on May 6 (left) and BC-12 on May 20 (right), 2025.

The estimated FYLF oviposition period in 2025 was between April 29 and June 17 for the Butte Creek sites, and between May 8 and June 16 for the WBFR sites; these periods are depicted in Appendix A alongside flows and water temperatures. The earliest egg-laying dates were estimated for each site using the date of the first egg mass observed, Gosner stage [1], in situ water temperature data, and approximate development rates from scientific literature and comparable studies (PG&E 2003; GANDA 2020; Wheeler et al. 2014; PG&E and Stillwater Sciences, unpubl. data). Estimated earliest egg-laying dates are presented in Table 4-4 as ranges to account for variation in developmental rates, which may be influenced by locality, temperature, and other environmental factors (Catenazzi and Kupferberg 2017, Zweifel 1955). For example, egg mass development is generally faster at warmer temperatures (Kupferberg et al. 2011). Notably, most of the 42 recently hatched egg masses observed during the May 20 survey at BC-7 were found in completely disconnected backwater pools where water temperatures were substantially higher than mainstem Butte Creek (the remaining recently hatched egg masses were found in partially connected pools with water temperatures closer to the mainstem). The estimated end dates of the FYLF oviposition periods shown in Appendix A are the last date when a new egg mass was observed.

Table 4-4. Estimated earliest foothill yellow-legged frog egg-laying dates at monitoring sites with observed egg masses, 2025.

Site	Date of First Egg Mass Observation (2025)	Latest Gosner Stage Observed	In situ Water Temperature at Egg Mass (°C)	Estimated Weeks Since Oviposition	Estimated Earliest Egg-laying Date (2025)
BC-6	05/21	22	16.5	1–3	4/30 to 5/12
BC-7	05/20	20–25[a]	23.4–30.6	1–3	4/29 to 5/13
BC-8	06/03	20–25[a]	16.8	2–4	5/2 to 5/14
BC-12	05/20	18–19	11.8	1–2	5/5 to 5/12
WBFR-1	06/02	18	--	1–2	5/18 to 5/25
WBFR-2	05/22	20–25	--	1–2	5/8 to 5/13

Notes: -- = no data recorded

[a] Hatching or recently hatched egg masses, generally associated with Gosner stages 20–25.

[1] If more than one egg mass was found at a site, the furthest developed—or recently hatched—egg mass was used to back-date egg-laying.

4.1.2 Non-target Species

Non-target herpetofauna observed during surveys are included in Table 4-5. Representative photographs are included in Appendix B.

Non-native predatory American bullfrogs (*Lithobates catesbeianus*) were prevalent along the lower Butte Creek sites, having been observed at Sites BC-1, BC-2, BC-3, BC-4, and BC-6. Table 4-6 summarizes the numbers of each bullfrog life stage observed at each site, Figures 4-17 through 4-21 provide maps showing bullfrog locations, and Figure 4-22 shows representative photographs of an adult and tadpoles. No bullfrogs were observed at the WBFR sites. All bullfrog observation data were entered into CDFW's Bullfrog Observation Collection Form (American Bullfrog Observation Report) to be used as part of statewide bullfrog monitoring. Other non-native predators observed incidentally during surveys include non-native fish species (observed at all sites) and crayfish (*Pacifastacus* spp.) (observed only at Butte Creek sites).

Known native predators of FYLF observed include all three species of garter snake (*Thamnophis couchii, Thamnophis elegans elegans,* and *Thamnophis sirtalis fitchi*) and Sierra newt (*Taricha sierrae*). Notably, surveyors observed an adult Sierra newt predating a FYLF egg mass at Site WBFR-1 on June 8, 2025 (Appendix B, Figure B-2).

Northwestern pond turtles (*Actinemys marmorata*) were consistently observed at Sites BC-1, BC-2, BC-3, BC-6, and BC-7, including at least one YOY at each of these sites during early season surveys. Surveyors observed an adult northwestern pond turtle feeding on a deceased adult FYLF at Site BC-7 on May 20, 2025. It is unclear if this was predation or scavenging, as the frog's cause of mortality is unknown. Northwestern pond turtles are dietary generalists and frequently consume carrion (Holland 1985), though they have also been known to eat other anuran species opportunistically (Bury 1986, Hays et al. 1999).

Native fish species observed during surveys included Sacramento pikeminnow (*Ptychocheilus grandis*) and rainbow trout (*Oncorhynchus mykiss*), documented predators of other ranid or anuran species (Brown and Moyle 1997, Vredenburg 2004).

Table 4-5. Non-target herpetofauna[a] species observed during surveys on Butte Creek and the West Branch Feather River, 2025.

Site	Life Stage (E = egg/ egg mass, T = tadpole/larvae, Y = young-of-year, A = adult/juvenile, U = unknown)							
	Sierra newt (*Taricha sierrae*)	Sierran treefrog (*Pseudacris sierra*)	California toad (*Anaxyrus boreas halophilus*)	American bullfrog (*Lithobates catesbeianus*)	Northwestern pond turtle (*Actinemys marmorata*)	Sierra garter snake (*Thamnophis couchii*)	Mountain garter snake (*Thamnophis elegans elegans*)	Valley garter snake (*Thamnophis sirtalis fitchi*)
BC-1	--	Y, A	--	T, A	Y, A	A	--	--
BC-2	--	Y	E, A	T, A	Y, U	A	--	--
BC-3	E	T	T, Y	T, A	Y, A	--	--	--
BC-4	E	Y, A	E, T, Y	T, A	--	--	--	--
BC-6	E, A	Y, A	--	T, A	Y, A	A	--	--
BC-7	E, A	T	T, Y	--	Y, A	A	A	--
BC-8	E, A	T, A	--	--	--	A	A	A
BC-12	E, T, A	T, A	--	--	--	A	--	--
WBFR-1	E, T, Y, A	T, A	--	--	--	A	--	--
WBFR-2	E, A	--	--	--	--	A	--	--

Notes: -- = not observed

[a] The following terrestrial reptiles were observed at various life stages during one or more surveys but not consistently counted: California whiptail (*Aspidoscelis tigris munda*), northern alligator lizard (*Elgaria coerulea*), northwestern skink (*Plestiodon skiltonianus skiltonianus*), northwestern fence lizard (*Sceloporus occidentalis occidentalis*), western sagebrush lizard (*Sceloporus graciosus gracilis*), western yellow-bellied racer (*Coluber constrictor mormon*), California striped racer (*Masticophis lateralis lateralis*), Northern Pacific rattlesnake (*Crotalus oreganus oreganus*), California mountain kingsnake (*Lampropeltis zonata*), and Pacific gopher snake (*Pituophis catenifer catenifer*).

Table 4-6. Number of American bullfrogs observed by life stage during surveys on Butte Creek and the West Branch Feather River, 2025.

Site	Life Stage	Number Observed						
		Visit 1 (5/5–5/7)	Visit 2 (5/19–5/22)	Visit 3 (6/2–6/5)	Visit 4 (6/16–6/19)	Visit 5 (8/25–8/28)	Visit 6 (9/22–9/26)	Total[a]
BC-1	Egg mass	0	0	0	0	0	0	0
	Tadpole	3	1	5	4	~200	~668	~881
	Adult/Subadult	0	7	3	11	3	4	28
BC-2	Egg mass	0	0	0	0	0	0	0
	Tadpole	~155	21	40	26	0	~220	~462
	Adult/Subadult	0	6	2	1	0	3	12
BC-3	Egg mass	0	0	0	0	0	0	0
	Tadpole	~510	~2,000	~150	~170	~800	~610	~4,240
	Adult/Subadult	1	5	3	2	0	0	11
BC-4	Egg mass	0	0	0	0	0	0	0
	Tadpole	0	0	0	0	~320	0	~320
	Adult/Subadult	0	0	0	0	1	1	2
BC-6	Egg mass	0	0	0	0	0	0	0
	Tadpole	0	0	0	~66	~1,000	~760	~1,826
	Adult/Subadult	1	3	0	2	0	1	7
BC-7	Egg mass	--	0	0	0	0	0	0
	Tadpole	--	0	0	0	0	0	0
	Adult/Subadult	--	0	0	0	0	0	0
BC-8	Egg mass	--	--	0	0	0	0	0
	Tadpole	--	--	0	0	0	0	0
	Adult/Subadult	--	--	0	0	0	0	0
BC-12	Egg mass	--	0	0	0	0	0	0
	Tadpole	--	0	0	0	0	0	0
	Adult/Subadult	--	0	0	0	0	0	0
WBFR-1	Egg mass	--	0	0	0	0	0	0
	Tadpole	--	0	0	0	0	0	0
	Adult/Subadult	--	0	0	0	0	0	0

Site	Life Stage	Number Observed						
		Visit 1 (5/5–5/7)	Visit 2 (5/19–5/22)	Visit 3 (6/2–6/5)	Visit 4 (6/16–6/19)	Visit 5 (8/25–8/28)	Visit 6 (9/22–9/26)	Total[a]
WBFR-2	Egg mass	0	0	0	0	0	0	0
	Tadpole	0	0	0	0	0	0	0
	Adult/Subadult	0	0	0	0	0	0	0

Notes: ~ = approximately; -- = no data (not surveyed)

[a] Because the same individuals may have been observed on separate visits, totals may exceed the actual number of individuals present.

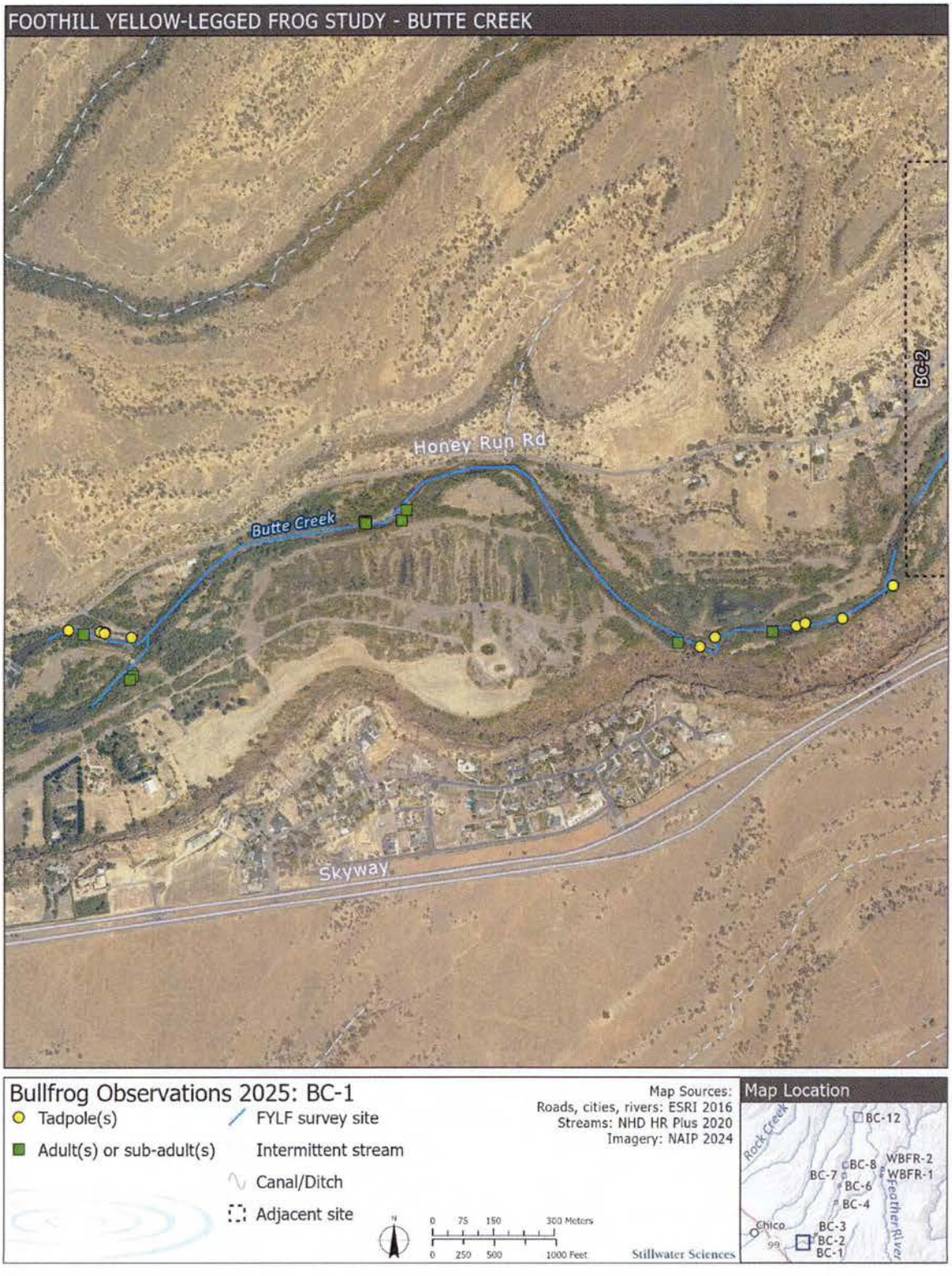

Figure 4-17. Bullfrog observation locations at Site BC-1, 2025.

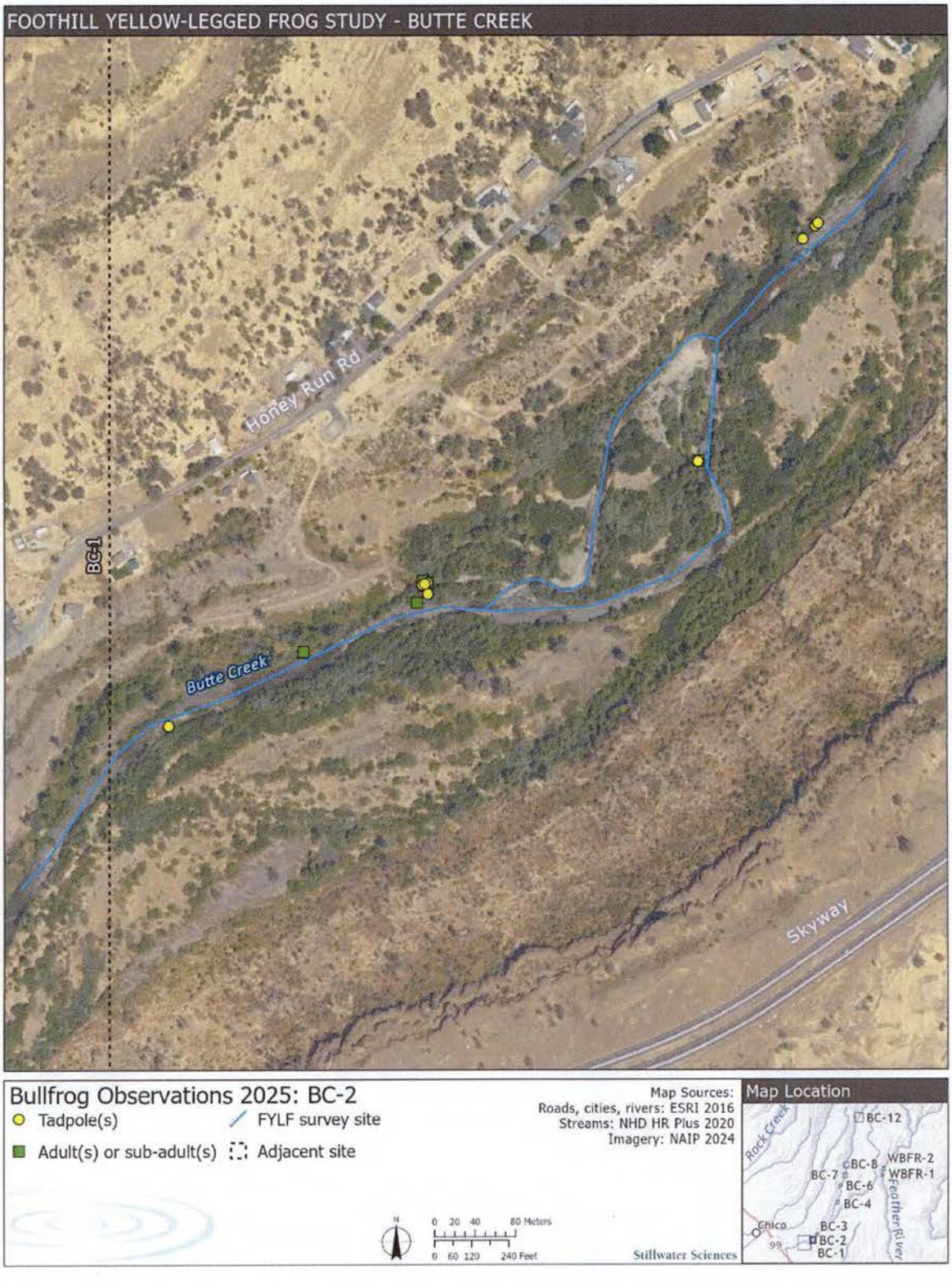

Figure 4-18. Bullfrog observation locations at Site BC-2, 2025.

Figure 4-19. Bullfrog observation locations at Site BC-3, 2025.

Figure 4-20. Bullfrog observation locations at Site BC-4, 2025.

Figure 4-21. Bullfrog observation locations at Site BC-6, 2025.

Figure 4-22. Gravid adult female bullfrog observed at Site BC-6 on May 7 (left) and bullfrog tadpoles observed in same backwater pool on September 24 (right), 2025.

4.2 Habitat Assessments and Transects

Habitat assessment summaries for each survey site and each site transect are provided in the following sections, and representative photographs of habitat at each site are included in Appendix C. Site-wide and transect habitat assessments were conducted at each site during the September 2025 surveys. Data collected from established habitat transects showed no evidence of vegetation encroachment that would impact the suitability of FYLF breeding habitat. Surveyors did not observe any red fine sediment (i.e., similar to what was released during the canal failure) at any site during 2025 (or 2024) surveys.

4.2.1 Site BC-1

Site BC-1 generally had poor-quality habitat for FYLF, with a few scattered areas of higher quality habitat (e.g., cobble bars). The survey site was low gradient and primarily consisted of approximately 1-m deep run and glide habitats, with some shallow riffles and a few deep mid-channel pools. The site contained a few backwater pools and small side channel habitats, though the presence and location of these varied at different flows. One deep mid-channel pool—approximately 450 m long at the downstream end of the survey reach—was excluded from all surveys as it contained marginal or no FYLF habitat with limited survey access. The dominant substrate throughout the site was cobble, though boulder and pebble were also common, and both sand and silt/mud were present in small patches. A riparian canopy shaded both banks for most of the survey reach, and, on average, shaded over 40 percent of the channel. Recreation and anthropogenic impacts on the channel (such as rock weirs) were observed but were concentrated at a few gravel/cobble bars in the downstream portions of the site.

The habitat assessment transect at Site BC-1 was located across a run just upstream of a wide low-gradient riffle. Because so few FYLF were observed at Site BC-1 (one subadult), the transect was placed in an area deemed to have breeding potential, though no FYLF or signs of breeding were observed nearby during surveys (Figure 4-1, Figure 4-23). The wetted channel width was

approximately 21 m, and bankfull width was approximately 75 m. The channel across the transect was primarily run habitat (81–100 percent) with a small amount of low-gradient riffle (1–20 percent). Aquatic substrate primarily consisted of moderately embedded cobble (41–60 percent), followed by boulder (21–40 percent) and gravel/pebble (21–40 percent), with small amounts of sand and silt/mud along the left bank (1–20 percent). The right bank was well vegetated with willow (*Salix* spp.), alder (*Alnus* sp.) and wild grape (*Vitis californica*), and the left bank had sparse forbs and willow saplings. Algae, including brown algae, coated much of the substrate across the transect, but no other emergent or in-channel vegetation was present. The transect contained sufficient aquatic cover opportunities, predominantly as gaps between substrate. Overhanging vegetation (willow, wild grape, and alder) shaded the right bank and covered between 1 and 25 percent of the transect. The bank gradient was low on the left bank and high on the right bank; neither bank showed signs of active erosion. The dominant upland habitat was foothill hardwood/conifer and showed signs of recent fire. The water was clear and turbidity was low. While there is only one set of habitat transect data for this site, a qualitative assessment showed no discernible evidence of vegetation encroachment that would impact the suitability of FYLF breeding habitat.

Figure 4-23. Habitat assessment transect (red line) at Site BC-1, looking toward river right, September 24, 2025.

4.2.2 Site BC-2

Site BC-2 generally had moderate quality habitat for FYLF. The survey site consisted of riffle and run habitats with a few small backwater pools throughout, as well as one short (approximately 60-m) and one extensive (approximately 350-m) side channel section. The dominant substrate throughout the reach was cobble, followed by pebble and silt/mud (the latter predominately in slow-moving sections, including the side channels and backwater pools), with boulder and sand also present at the site. Emergent vegetation was present along slower-moving areas of the main channel and in backwater pools. Riparian vegetation grew along both banks and shaded less than 20 percent of the channel throughout the reach. There were a few large, unvegetated cobble bars in the upstream portion of the site, beginning around the downstream end of the extensive side channel. Evidence of recreation was observed throughout the survey reach, including litter and debris, chairs, stacked rock weirs, driftwood structures, cleared vegetation, and compacted soils. Recreators were observed during two out of six surveys.

The habitat assessment transect at Site BC-2 was established on the upstream end of a large cobble bar at the upstream extent of the survey site, in an area where many post-metamorphic frogs were found during all surveys and where a cluster of recently hatched tadpoles was found during the June 5, 2025 survey (Figure 4-2, Figure 4-24). The stream transect was predominately run (41–60 percent), with low-gradient riffle (21–40 percent) and exposed cobble (1–20 percent) habitats comprising the remainder. The wetted channel width was approximately 19 m, and bankfull width was approximately 51 m. The stream was low gradient at the transect. Aquatic substrate across the transect generally had low embeddedness and consisted of cobble (41–60 percent), pebble (21–40 percent), and silt/mud (21–40 percent), with some boulders and sand. Emergent vegetation (forbs and grasses) grew sparsely on the right bank and densely on the left bank. Dense margin vegetation (consisting of forbs, grasses, willows, alders, and sedges [*Carex* spp.]) grew along the left bank. The transect contained abundant aquatic cover opportunities, predominantly as gaps between substrate. The riparian canopy and overhanging vegetation along the left bank shaded between 1 and 25 percent of the channel and consisted of blackberry (*Rubus* sp.), willow, and alder. The bank gradient was low on the right bank and high on the left bank, with signs of active erosion. Upland habitat at the transect was primarily foothill hardwood/conifer and showed signs of recent fire. The water was clear and turbidity was low. While there is only one set of habitat transect data for this site, a qualitative assessment showed no discernible evidence of vegetation encroachment that would impact the suitability of FYLF breeding habitat.

Figure 4-24. Habitat assessment transect (red line) at Site BC-2, looking toward river left, September 24, 2025.

4.2.3 Site BC-3

Site BC-3 generally had moderate-quality habitat for FYLF. The survey site was dominated by relatively shallow run and riffle habitats in the main channel, with a few backwater pools and side channels throughout. The highest quality FYLF habitat included bedrock pools at the downstream end of the site and a cobble bar in the middle of the survey reach along the right bank. Substrate in the main channel was predominately cobble and pebble, followed by silt/mud (which was primarily associated with the backwater pools and slower moving areas), though boulder, bedrock, and sand were all also present in small quantities. Overhanging riparian vegetation shaded much of the site's margins, and though a riparian canopy was present throughout the entire site, it consistently shaded less than 20 percent of the channel width. Recreation was regularly observed, with swimmers, recreators, and miners present within the survey reach during most surveys. Anthropogenic effects on the channel, such as litter and debris, rock weirs, vegetation clearing, and soil compaction along the banks were also observed.

The habitat assessment transect at Site BC-3 was located across a low-gradient riffle (41–60 percent), slow moving side channel (21–40 percent), and dry cobble bar (21–40 percent). Adult and YOY FYLF were found at this cobble bar across most surveys in 2025, and bullfrogs were

observed in the side channel during the September 2025 survey (Figure 4-3, Figure 4-19, Figure 4-25). The wetted channel width was approximately 35 m, and bankfull width was approximately 54 m. Aquatic substrate primarily consisted of loosely embedded cobble (61–80 percent), followed by gravel/pebble (1–20 percent), and silt/mud (1–20 percent), with minimal amounts of boulder and sand. Forbs and grass grew along the right bank as margin vegetation and across the cobble bar as both emergent and margin vegetation. Green algae was recorded as submerged vegetation along the edges of the cobble bar. Overhanging margin vegetation, including wild grape, blackberry, alder, and willow, shaded the right bank. Both banks had a riparian canopy predominately composed of willow and alder, though combined, this canopy shaded less than 25 percent of the stream. The upland habitat was predominately foothill hardwood. The transect offered plentiful aquatic cover opportunities, predominantly as gaps between substrate. The bank gradient was low on the right bank and moderate on the left bank, and both banks showed signs of erosion. The water was clear and turbidity was low. Habitat transect data showed no discernible evidence of vegetation encroachment that would impact the suitability of FYLF breeding habitat.

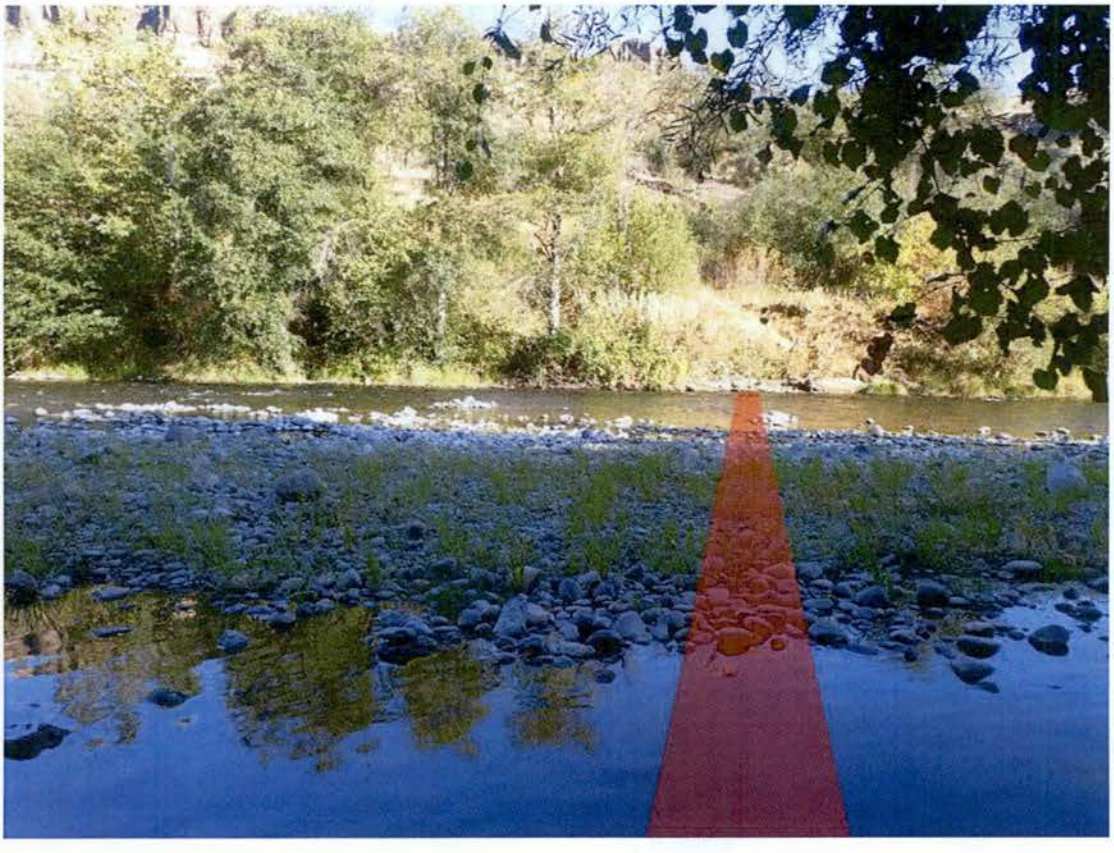

Figure 4-25. Habitat assessment transect (red line) at Site BC-3, looking toward river left, September 22, 2025.

4.2.4 Site BC-4

Site BC-4 generally had moderate- to high-quality habitat for FYLF. The survey site consisted of riffle, run, and mid-channel pools, with an extensive side channel and backwater pool complex, including a large cobble bar. Substrate was predominately cobble and boulder, followed by bedrock, pebble, silt/mud, and sand. Emergent vegetation was present along slower-moving areas throughout the site. Overhanging vegetation and a riparian canopy shaded most of both banks and between 21 and 40 percent of the channel overall. There were a few residences adjacent to the survey site with associated human impacts throughout the site, such as patches of bare ground, as well as evidence of vegetation clearing and soil compaction.

The habitat assessment transect at Site BC-4 was located on the upstream end of a large cobble bar and backwater complex where YOY, subadult, and adult FYLF were found during most surveys in 2025 (Figure 4-4, Figure 4-26). The transect included an approximate equal proportion of backwater pool/pool tail-out (21–40 percent), low-gradient riffle (21–40), and dry cobble/boulder (21–40 percent) habitats, as well as a short section of run/glide (1–20 percent). The wetted channel was approximately 40 m wide, and the bankfull width was approximately 50 m. The stream gradient at the transect was low. Aquatic substrate primarily consisted of moderately embedded cobble (41–60 percent) and boulder (41–60 percent), with small amounts of pebble (1–20 percent) and silt/mud (1–20 percent). Grasses were the only emergent vegetation across the transect, and margin vegetation included grasses, sedges, willow, alder, blackberry, and wild grape. There was no submerged vegetation. The transect contained abundant aquatic cover opportunities, predominantly as gaps between substrate. The riparian canopy at the site primarily consisted of alder and shaded less than 25 percent of the transect width. The bank gradient was low on both banks, and upland habitat was predominately foothill hardwood/conifer, and had recently burned further upslope from the creek. The water was clear and turbidity was low. Habitat transect data showed no discernible evidence of vegetation encroachment that would impact the suitability of FYLF breeding habitat.

Figure 4-26. Habitat assessment transect (red line) at Site BC-4, looking toward river left, September 25, 2025.

4.2.5 Site BC-6

Site BC-6 generally had moderate- to high-quality habitat for FYLF. The survey site consisted of low-gradient riffles, deep runs, and mid-channel pools, as well as two notable backwater pools and small side channel areas present at different flows. Substrate was predominately cobble and boulder, with small amounts of pebble, bedrock, silt/mud, and sand. One substantial cobble/boulder bar was present within the site and was associated with one of the backwater pools. Overhanging vegetation and a riparian canopy shaded less than 20 percent of the channels width throughout the site, and submerged vegetation (algae) was present throughout much of the survey reach. One unnamed tributary entered the creek in the upstream portion of the site. The survey site is adjacent to a series of residences, and associated impacts, such as channel manipulation, patches of bare ground, vegetation clearing, and soil compaction were evident along portions of the bank.

The habitat assessment transect at Site BC-6 was located at the upstream end of a cobble/boulder bar and associated backwater pool. A FYLF egg mass (and an estimated 1,000 bullfrog tadpoles) were found in this backwater pool in 2025 (Figure 4-5, Figure 4-21, Figure 4-22, Figure 4-27). The wetted channel width and bankfull width were both approximately 30 m. The stream gradient at the transect was moderate and generally characterized as run/glide (41–60 percent), high-

gradient riffle (21–40 percent), and backwater pool (1–20 percent), with some dry cobble/boulder (1–20 percent). Aquatic substrate was primarily cobble (41–60 percent) and boulder (41–60 percent), both with moderate embeddedness, though small amounts of pebble, bedrock, and sand were also present. Margin vegetation was primarily willow and alder but also included sedges, blackberry, wild grape, and forbs. No emergent or submerged vegetation was present within the transect. A riparian canopy of alder and willow shaded less than 25 percent of the transect. The transect contained aquatic cover opportunities, predominantly as gaps between substrate. Both banks were steep and showed signs of active erosion. Upland habitat at the transect was foothill hardwood/conifer. The water was clear and turbidity was low. Habitat transect data showed no discernible evidence of vegetation encroachment that would impact the suitability of FYLF breeding habitat.

Figure 4-27. Habitat assessment transect (red line) at Site BC-6, looking toward river right, September 24, 2025.

4.2.6 Site BC-7

Site BC-7 contained moderate-quality habitat for FYLF with pockets of high-quality habitat. The survey site consisted primarily of riffle and run habitats, with some large mid-channel pools (including one deep, 120-m-long pool that was unsafe to access and therefore bypassed). The site also contained a series of backwater pools, some of which were fully disconnected from the main

channel during all visits in 2025, and all of which were fully disconnected by the final egg mass survey on June 18, 2025. These pools contained the highest concentration of FYLF egg masses observed at any site (Figure 4-6), and both freshly laid and hatched egg masses were observed in these pools during the first visit on May 20, 2025. Boulder, bedrock, and cobble were equally predominant throughout the survey reach; small quantities of sand, silt/mud, and pebble were also present. Margin, overhanging riparian, and emergent vegetation were present throughout much of the site, and the riparian canopy generally shaded less than 20 percent of the channel width. One large perennial tributary, one smaller intermittent tributary, and one seep entered the creek within the site. An active mining claim and mining camp are associated with the survey site; related impacts include channel manipulation, increased erosion, and anthropogenic debris within the channel.

The habitat assessment transect at Site BC-7 was located across a moderate-gradient riffle in an area where adult FYLF were observed during 2025 surveys, and adjacent to the bedrock pools where high concentrations of egg masses were observed during early-season surveys (Figure 4-6, Figure 4-28). The wetted channel width was approximately 14 m, and bankfull width was 42 m. At the transect the creek was moderate gradient and primarily riffle habitat (81–100 percent), with small amounts of run/glide (1–20 percent) and dry boulder (1–20 percent). Aquatic substrate consisted primarily of boulder (61–80 percent), with low embeddedness as well as small amounts of bedrock, gravel, pebble, and sand (all less than 20 percent). The margin vegetation across the transect was primarily willow and alder, but sedge and forbs were also present. Umbrella plant (*Darmera peltata*) and sedges accounted for all emergent vegetation across the transect, and there was submerged vegetation (algae) present. The transect offered aquatic cover opportunities, predominantly as gaps between substrate. The riparian canopy across the transect was primarily willow and shaded less than 25 percent of the transect. The bank gradient was moderate at the right bank and low at the left bank, and both banks showed signs of active erosion. Upland habitat at the transect was foothill hardwood/conifer. The water was clear and turbidity was low. A well-established mining camp is present just upstream of the transect on the left bank, though anthropogenic impacts on the transect due to mining were less than in 2024 (i.e., there was no channel manipulation or debris within the transect in 2025). The right bank of this transect is 15 m away from the largest of the bedrock pools where high concentrations of FYLF egg masses and tadpoles, as well as many adults, were found in 2025 (Figure 4-6). Habitat transect data showed no discernible evidence of vegetation encroachment that would impact the suitability of FYLF breeding habitat.

Figure 4-28. Habitat assessment transect (red line) at Site BC-7, looking toward river right, September 24, 2025.

4.2.7 Site BC-8

Site BC-8 had a variety of habitats for FYLF, including a few areas of high-quality breeding habitat. The downstream portion of the site was generally lower-quality breeding habitat and was characterized by high-gradient riffle and run habitats over bedrock in a channelized, steep canyon. The upstream portion contained areas of high-quality breeding habitat and generally had a wider channel with more side-channel and riffle habitats. Overall, the site was predominantly run and riffle habitats, with some mid-channel pools and few side channels, backwater pools, and associated cobble bars. Substrate was predominately bedrock followed by boulder and cobble, though pebble, sand, and silt/mud were also present. Overhanging riparian and emergent vegetation were present throughout much of the site, and a canopy dominated by willow and alder shaded less than 20 percent of the channel width on average. Woody debris was present throughout the upstream portion of the survey reach. Two tributaries entered the creek within the site. Evidence of mining activity was observed within the survey reach, including erosion and anthropogenic debris within the channel.

The habitat assessment transect at Site BC-8 was located across a low-gradient riffle, with a side channel along the right bank and a side channel and small cobble bar on the left bank, in an area

where tadpole and YOY FYLF were found during 2025 surveys and just downstream of an area where several egg masses, thousands of tadpoles, and several YOY were found during 2025 surveys (Figure 4-7, Figure 4-29). The wetted channel width was approximately 38 m, and the bankfull width was approximately 52 m at the transect. The stream gradient at the transect was moderate and consisted of low-gradient riffle (41–60 percent), run (21–40 percent), side channel (1–20 percent), and dry cobble/boulder (1–20 percent) habitats. Aquatic substrate primarily consisted of boulder (61–80 percent) and cobble (21–40 percent), with small amounts of pebble, sand, and silt/mud (all less than 20 percent). Margin vegetation was primarily blackberry and wild grape, but also included sedge, willow, and alder. Umbrella plant and sedge grew as sparse emergent vegetation across the transect. The transect contained aquatic cover opportunities, predominantly as gaps between substrate and woody debris. Overhanging vegetation shaded the far edges of both banks, and willow-dominated riparian canopy shaded less than 25 percent of the channel width. The bank gradient was moderate at both transect ends and signs of erosion were observed on the left bank. Foothill hardwood/conifer was the dominant upland habitat at the transect. The water was clear and turbidity was low. Habitat transect data showed no discernible evidence of vegetation encroachment that would impact the suitability of FYLF breeding habitat.

Figure 4-29. Habitat assessment transect (red line) at Site BC-8, looking toward river left, September 23, 2025.

4.2.8 Site BC-12

Site BC-12 contained a variety of habitats for FYLF ranging from poor to high suitability. The site consisted primarily of run and riffle habitats, with some mid-channel and backwater pool areas, a few short cascade sections, and a few large cobble bars. Substrate overall was relatively equal among boulder, bedrock, and cobble. Overhanging riparian and emergent vegetation were present throughout much of the site, and large woody debris was observed sporadically throughout the reach. A mature riparian canopy generally shaded between 21 and 40 percent of the channel width across the survey reach. West Branch Butte Creek entered the mainstem at the top of this site, and six additional unnamed tributaries entered the creek within the site. Moderate to high recreation levels were observed during all surveys, and active gold mining was observed during four out of five surveys. Anthropogenic impacts included the presence of people and pets, erosion and channel alteration from mining, and trash and debris throughout the survey reach.

The habitat assessment transect at Site BC-12 was located across a deep run with a small side pool along the right bank, in an area where YOY FYLF were found during the 2023 and 2024 surveys and just downstream of an area where a FYLF egg mass, YOY, and adult FYLF were found in 2025 (Figure 4-8, Figure 4-30). The wetted channel width was approximately 20 m, and bankfull width was 31 m at the transect. The stream gradient at the transect was low and consisted of run (41–60 percent), backwater pool (41–60 percent), and dry boulder/bedrock (1–20 percent) habitats. Aquatic substrate across the transect consisted of relatively equal proportions of cobble (21-40 percent) and pebble (21-40 percent), with boulder, bedrock, and sand each additionally making up between 1–20 percent of the transect. Vegetation at the margins of the transect was primarily sedge but willow, alder, and grasses also occurred. Umbrella plant was the dominant emergent vegetation across the transect with some sedges and forbs. The transect contained aquatic cover opportunities, predominantly as gaps between substrate. Overhanging vegetation and an alder-dominated riparian canopy shaded less than 25 percent of the wetted transect. The left and right bank gradients were high and moderate, respectively, with signs of active bank erosion on the right bank. Upland habitat at the transect consisted of mixed conifer forest. Signs of mining and recreation impacts were observed at the transect. The water was clear and turbidity was low. Habitat transect data showed no discernible evidence of vegetation encroachment that would impact the suitability of FYLF breeding habitat.

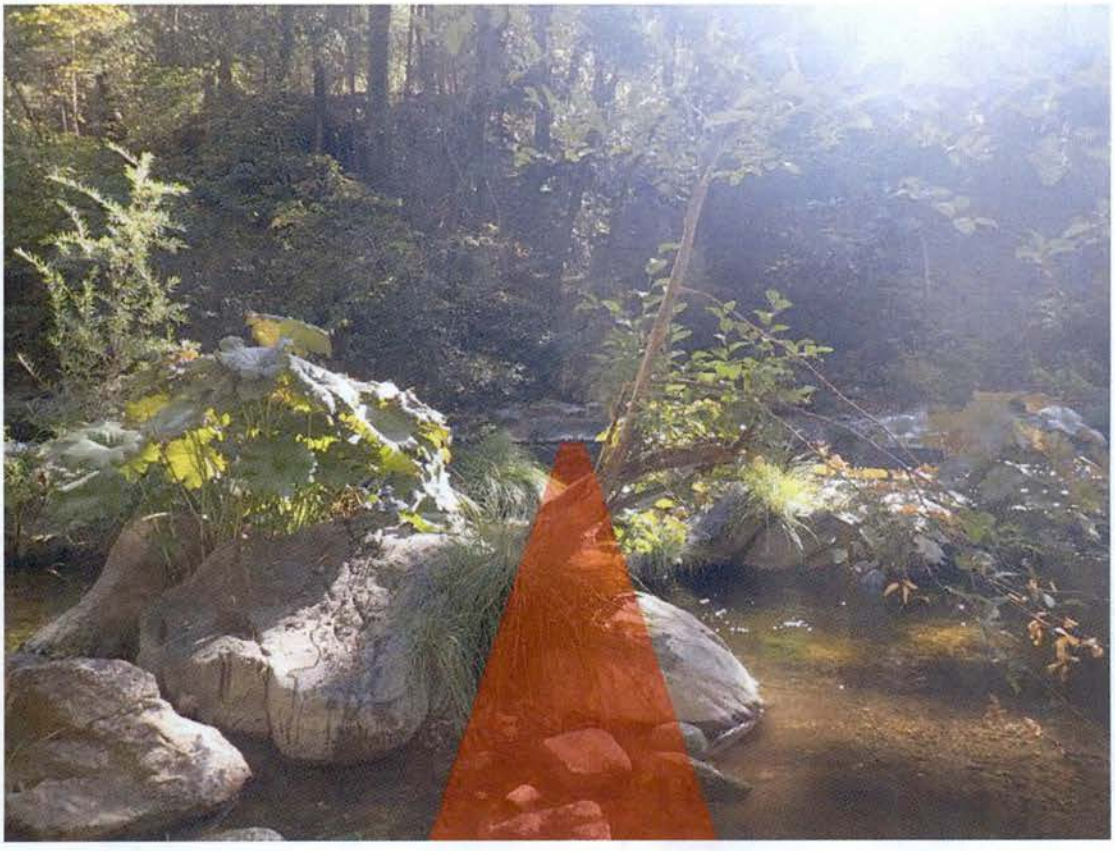

Figure 4-30. Habitat assessment transect (red line) at Site BC-12, looking toward river left, September 23, 2025.

4.2.9 Site WBFR-1

Site WBFR-1 contained several stretches of high-quality habitat for FYLF. Although the site consisted primarily of deep mid-channel pools and long stretches of runs, a few cobble bars—one of which was extensive—associated with riffles provided high-quality habitat and accounted for most of the FYLF observations (across all life stages) at the site. Small, shallow backwater areas associated with these cobble bars were present throughout the survey reach at lower flows. The dominant substrate was cobble followed by pebble and boulder, though sand and bedrock were also present, particularly in the downstream pool and run sections. Overhanging riparian and emergent vegetation were present along most of the site's margins, and a mature riparian canopy shaded the stream edges throughout the site. One unnamed, perennial tributary entered the river on the left bank near the mid-point of the site, and FYLF were observed here during multiple surveys. No recreation or mining impacts were observed in the reach, though recreators were present just downstream of the reach during two out of five surveys.

The habitat assessment transect at Site WBFR-1 was established across the upstream end of the cobble bar and associated backwater pools where all five egg masses and most post-metamorphic individuals were found during surveys (Figure 4-9, Figure 4-31). The wetted channel width at the

transect was approximately 29 m, and bankfull width was 53 m. The stream gradient at the transect was low and consisted primarily of backwater pool (41–60 percent) interspersed with dry cobble and boulders (21–40 percent); low-gradient riffle (21–40 percent) was present along the left bank and contained the thalweg and most of the flow. Aquatic substrate was moderately embedded and consisted relatively equally of small boulders (41–60 percent) and cobble (21–40 percent), though bedrock, sand, and silt/mud were also present. Margin vegetation included blackberry, various forbs, and sedges, the latter of which also occurred as emergent vegetation along with umbrella plant. A riparian canopy composed of alder, some willow, and incense cedar (*Calocedrus decurrens*) shaded less than 25 percent of the transect width. Gaps between substrate, along with woody debris and root wads, offered plentiful opportunities for aquatic cover. The left bank gradient was high and right bank gradient was moderate. Upland habitat at the transect consisted of mixed conifer forest that had recently burned further up slope. The water was clear and turbidity was low. While there is only one set of habitat transect data for this site, a qualitative assessment showed no discernible evidence of vegetation encroachment that would impact the suitability of FYLF breeding habitat.

Figure 4-31. Habitat assessment transect (red line) at Site WBFR-1, looking toward river left, September 26, 2025.

4.2.10 Site WBFR-2

Site WBFR-2 contained high-quality habitat for FYLF across most of its length and consisted primarily of runs punctuated by high- and low-gradient riffles with a few slower moving mid-channel pools. A few cobble bars were present throughout the survey reach. Of the 42 egg masses observed at the site, 33 were located along the largest cobble bar in the downstream third of the site (Figure 4-10). The co-dominant substrates at the site were cobble, boulder, and bedrock, all of which occurred in similar quantities, though pebble, sand, and silt/mud were also present. Overhanging riparian and emergent vegetation were present along the margins of much of the site, apart from a few barren bedrock areas and the aforementioned cobble bars. A riparian canopy shaded the margins throughout much of the downstream portion of the reach, though on average it shaded less than 20 percent of the stream's width. One seep entered the channel in the downstream third of the reach on the left bank, and post-metamorphic FYLF were observed at this location during the August and September surveys. Recreation and related evidence (i.e., stacked rock weirs) were observed at the site during every survey. Active mining and/or mining impacts were observed throughout the reach but were notably more prevalent in the upstream portion of the reach near a campsite that was occupied during most surveys.

The habitat assessment transect at Site WBFR-2 was established at the downstream end of the large cobble bar where most of the egg masses were observed (Figure 4-10, Figure 4-32). The wetted channel width at the transect was 17 m, and the bankfull width was 40 m. The stream gradient at the transect was low and consisted primarily of a mid-channel pool (81–100 percent), with some dry cobble and boulders (1–20 percent) that created a small backwater (1–20 percent) along the left bank. Aquatic substrate had low embeddedness and consisted primarily of cobble (61–80 percent) followed by boulder (21–40 percent), with bedrock, pebble, and sand combining to constitute less than 20 percent of the transect. Margin vegetation was sparse and consisted of a single sedge on the left bank. There was no emergent, submerged, or overhanging vegetation, and no riparian canopy. Gaps between substrate offered many opportunities for aquatic cover. The bank gradient was low on the right bank along the cobble bar, and high on the left bank where active erosion (possibly due to mining) was observed. Upland habitat at the transect consisted of recently burned scrub/shrub. The water was clear and turbidity was low. Recreation was observed at the transect and a small fire ring was located approximately 2 m inland from the right edge of the transect. While there is only one set of habitat transect data for this site, a qualitative assessment showed no discernible evidence of vegetation encroachment that would impact the suitability of FYLF breeding habitat.

Figure 4-32. Habitat assessment transect (red line) at Site WBFR-2, looking toward river left, September 25, 2025.

5.0 Discussion

5.1 2025 Survey Results

Biologists observed FYLF at all Butte Creek sites surveyed during the 2025 VESs. The survey effort included eight representative sites along Butte Creek located downstream of the area affected by the Butte Canal breach and resulting sediment plume in 2023. Evidence of successful FYLF breeding to metamorphosis was documented at six of the eight sites, where both tadpoles and YOY were observed. At the remaining two sites, no egg masses or tadpoles were detected; a single subadult was observed at Site BC-1, and YOY, subadults, and adults were observed at Site BC-3.

Site BC-1 was generally characterized as poor-quality FYLF habitat, and no egg masses or tadpoles have ever been documented at that site during any past surveys. In 2006, biologists observed YOY in the BC-1 survey reach; however, those post-metamorphic frogs could have originated from nearby sites with moderate- to high-quality habitat where breeding has been consistently observed (e.g., Site BC-2). Similarly, although only YOY provided the only possible evidence of breeding at Site BC-3 in 2025, both tadpoles and YOY were observed there in 2006 and 2024 (PG&E 2008, 2025a). It is unclear whether eggs and/or tadpoles were simply undetected during the 2025 survey effort or if YOY migrated from more productive areas (e.g., Site BC-2).

Breeding was also observed in 2025 at both WBFR sites (WBFR-1 and WBFR-2), which were included to compare FYLF breeding and recruitment in reaches not affected by the breach. Numerous individuals of all life stages were observed at both sites.

FYLF breeding and oviposition in Butte Creek and the WBFR occurred in late May to early June, consistent with known breeding phenology in California (Hayes et al. 2016). In 2025, biologists first observed egg masses at Sites BC-6, BC-7, BC-12, and WBFR-2 during surveys on May 20–22. While not surveyed in early May due to access limitations, hatched egg masses and tadpoles were observed at Site BC-7 on May 20, in a series of warm backwater pools with varying degrees of connectivity to the main channel (mostly disconnected or partially connected). Because survey timing is dictated by flow conditions, surveys may be delayed in spring until biologists can safely access survey reaches. Considering this and for future analyses, inconsistent egg mass count data can either be incorporated into population-estimate modeling, or a different FYLF life stage (e.g., adult) can be used in the analysis, as described in the Study Plan (PG&E 2025b).

Throughout the season, biologists documented one desiccated egg mass, five deceased tadpoles, and five deceased post-metamorphic frogs. This included three adult FYLF found dead with unknown causes of mortality (one at Site BC-12 and two at Site BC-7). Notably, one of the deceased adults was being consumed post-mortem by a northwestern pond turtle, and another was observed with an egg mass partially emerged from its cloaca. Surveys documented a single deceased YOY at each of the WBFR sites (WBFR-1 and WBFR-2), five dead tadpoles at Site WBFR-1, and one desiccated egg mass at Site WBFR-2. While the causes of mortality are unknown, there is no evidence linking FYLF deaths to project operations or management activities. If a single underlying factor were responsible, mortality would likely have been concentrated

within specific reaches or time periods. Instead, a few dead individuals were observed across both Butte Creek and WBFR sites and throughout the monitoring season. Overall, these mortalities represented less than 1 percent of all observations, consistent with mortality observations commonly reported in anuran surveys.

5.2 Spatial and Temporal Population Demographic Variability

While statistical analysis and population size estimates were not conducted as part of this 2025 report, information on the abundance and distribution of FYLF by life stage was evaluated to look for spatial patterns and temporal trends that may inform early evaluation of significant loss, per the Study Plan (PG&E 2025b). Interannual variability and site comparisons were evaluated using individual count data[2]; Appendix D provides a table summarizing FYLF count data across monitoring years used to inform this evaluation. Future analysis would model imperfect detection and estimated population size to more thoroughly assess potential impacts of the Butte Canal breach and differences observed across sites and survey years.

Overall, more FYLF of most life stages[3] were observed in Butte Creek in 2025 compared with 2024, and in Butte Creek and the WBFR in 2025 compared with the baseline relicensing data from 2006. There was variability among survey years when looking at individual sites. For example, in 2025, the tadpole count data were orders of magnitude higher at Sites BC-7, BC-8, and BC-12 while considerably lower at Sites BC-4 and BC-6 compared with 2024.

The abundance of a given life stage shifted among sites between survey years. In 2006, biologists observed substantially higher numbers of most life stages of FYLF at Site BC-6 compared with Site BC-7, with 47 egg masses observed at Site BC-6 and no egg masses observed at Site BC-7. However, that trend was reversed in 2025, and only one egg mass was observed at Site BC-6 and 69 egg masses (42 hatched and 27 active) were observed at Site BC-7. Similar shifts in the FYLF population distribution can be seen at WBFR sites. For example, in 2006, biologists observed 20 adults at Site WBFR-1 compared with 7 adults at Site WBFR-2. In 2025, over 60 adults were observed at Site WBFR-2 compared with only 4 adults in Site WBFR-1. These patterns likely reflect natural population movements among reaches and/or habitat changes over the 19-year survey history. In general, across Butte Creek and the WBFR, there were no obvious or substantial changes in FYLF population size or demographics from 2006 to 2025 that would suggest declining or diminishing FYLF populations.

Biologists observed more FYLF post-metamorphic frogs at WBFR sites compared with the Butte Creek sites. The WBFR sites had a higher number of observed YOY, subadult, and adult FYLF compared with Butte Creek sites in 2025, and a higher number of subadult and a similar number

[2] Count data were summarized by the total number of FYLF observed grouped by life stage at each site during each survey effort; an exception was made for egg masses, for which exact total counts were available and used. The highest number of FYLF observed at each site during a single survey event for each year was used for spatial and temporal comparisons to account for varying number of field surveys conducted over the years.

[3] There were more YOY and similar number of subadults observed in Butte Creek in 2006 compared with 2025, and a similar number of egg masses observed in WBFR in 2006 compared with 2025.

of adult FYLF compared with Butte Creek Sites in 2006. However, that pattern is not seen across all life stages. BC-7 and BC-6 on Butte Creek had the highest egg mass and tadpole counts of all sites, including at the WBFR sites in 2025 and 2006, respectively. The difference in the number of post-metamorphic FYLF observations between the two rivers may be a result of differences in habitat complexity, as higher FYLF population densities have been associated with stream reaches having greater geomorphic habitat heterogeneity (Yarnell 2005).

The differences in FYLF observed between the WBFR and Butte Creek could be attributed to the distribution and abundance of bullfrogs, a non-native predator of FYLF. While there are no known documented bullfrog sightings on the WBFR during previous relicensing or monitoring surveys, bullfrogs are present and appear to have moved up the Butte Creek drainage since 2006. During the 2006 relicensing surveys, bullfrogs were only documented at sites BC-1 through BC-3, whereas during the 2024 and 2025 surveys, evidence of bullfrog breeding was found up to Site BC-6. In 2024, a bullfrog adult was seen even farther upstream at prior Site BC-9, located near Lower Centerville Diversion Dam, though that site was removed from the monitoring program after one visit due to safety concerns, and not surveyed in 2025. Bullfrogs have been reported as a conservation concern for declining anuran species (Bury and Whelan 1984, Moyle 1973). They are also a known reservoir for *Batrachochytrium dendrobatidis*, the pathogen that causes chytridiomycosis, which has been documented to cause die-offs in FYLF populations (Adams et al. 2017). Bullfrog tadpoles may also impact grazing by FYLF tadpoles, resulting in poorer body conditions at metamorphosis (Kupferberg 1997). Appendix E provides a table with bullfrog count data across monitoring years.

Available data from 2023–2025 do not indicate that population-level demographic and abundance changes on Butte Creek since 2006 are a result of the Butte Canal breach. The breach occurred in August 2023, and the pulse flow of sediment would likely have had the largest effect on FYLF tadpoles because they are fully aquatic with limited ability to move locations and seek refuge. If the breach had resulted in a near-total FYLF tadpole cohort failure in 2023, few subadults would have been expected in 2024, followed by a reduced number of adults observed in 2025, and subsequently reduced breeding and recruitment in 2026. However, biologists observed more adult FYLF at Butte Creek sites in 2025 compared with 2024 *and* 2006, and a similar or substantially higher number of subadult FYLF at Butte Creek sites in 2025 compared with 2006 and 2024, respectively, suggesting no currently discernible impacts from the canal breach on the population based on the data available.

The August 2023 breach likely resulted in localized mortality of a portion of the FYLF tadpole cohort through mechanisms such as smothering by fine sediment, reduction of interstitial refuge, and temporary loss of existing algal food resources. These impacts were likely spatially variable, with greater effects in habitats that experienced deeper or more persistent sediment deposition. At the same time, partial survival of tadpoles is likely because of the spatial heterogeneity of tadpole rearing habitats, including the use of shallow edgewaters, backwater pools, and low-velocity side channels (Kupferberg 1996). During the 2023 sediment pulse, such habitats may have functioned as refugia, allowing a portion of the larval cohort to avoid lethal burial or starvation despite sediment deposition in other parts of the channel. Although fine sediment likely buried some cobble substrates, studies indicate that periphytic biofilms can persist and remain metabolically active on fine sediments and in low-velocity depositional habitats, and that grazing organisms can

continue to exploit these food resources where cobble-associated algae are reduced (Kupferberg 1997, Biggs et al. 1999, Pérez-Calpe et al. 2021). The observation of YOY FYLF in September and October 2023 following the canal breach (PG&E and Stillwater Sciences 2023), presence of subadults in 2024, and observed successful breeding and recruitment in 2025 further support the inference that the disturbance likely resulted in only a partial loss of the 2023 tadpole cohort.

Because FYLF typically require two to three years to reach reproductive maturity, population-level responses to disturbance may be delayed relative to the year of impact (Kupferberg et al. 2009). As described in the FERC-approved Study Plan and in accordance with agency requirements, FYLF monitoring in Butte Creek will continue annually through 2028. This continued monitoring, including comparison with control sites and historical data, will be useful for detecting any delayed effects and informing whether adaptive management strategies are needed.

6.0 References

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APPENDIX A

FLOW AND WATER TEMPERATURE DATA

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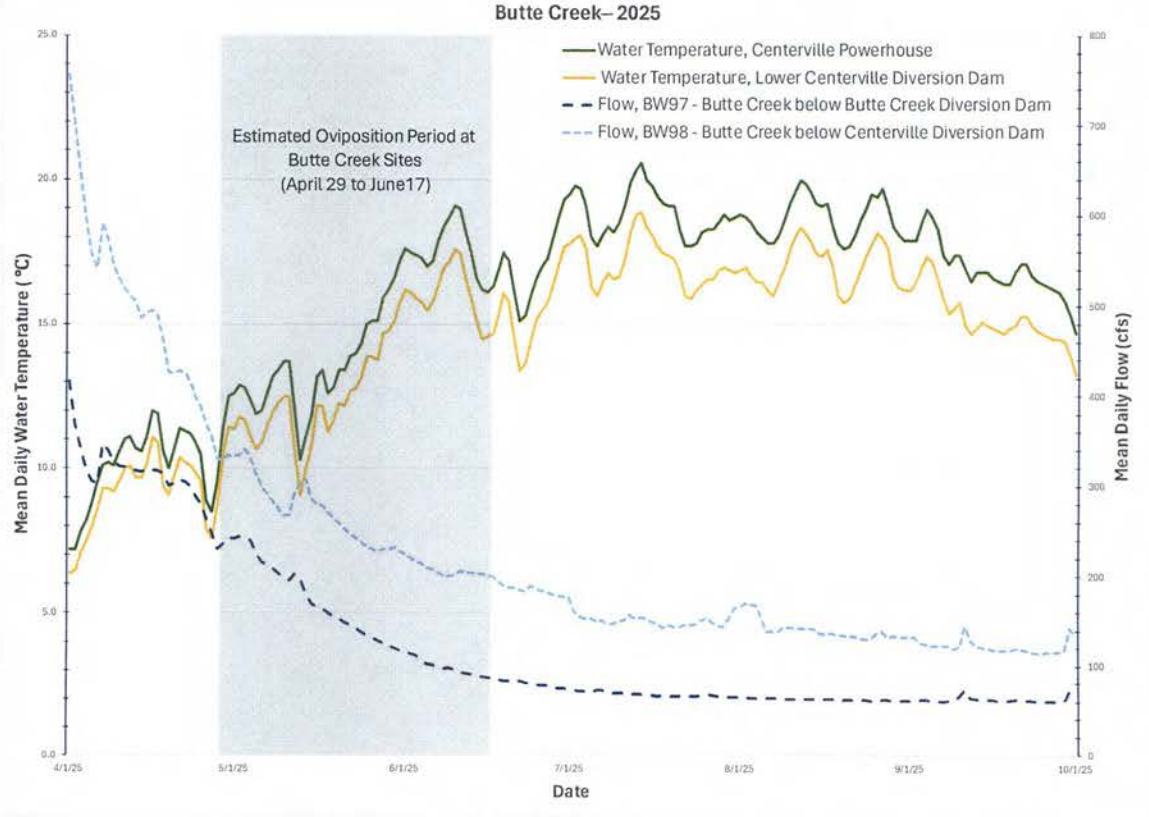

Figure A-1. Flow and water temperature data at locations along Butte Creek, 2025

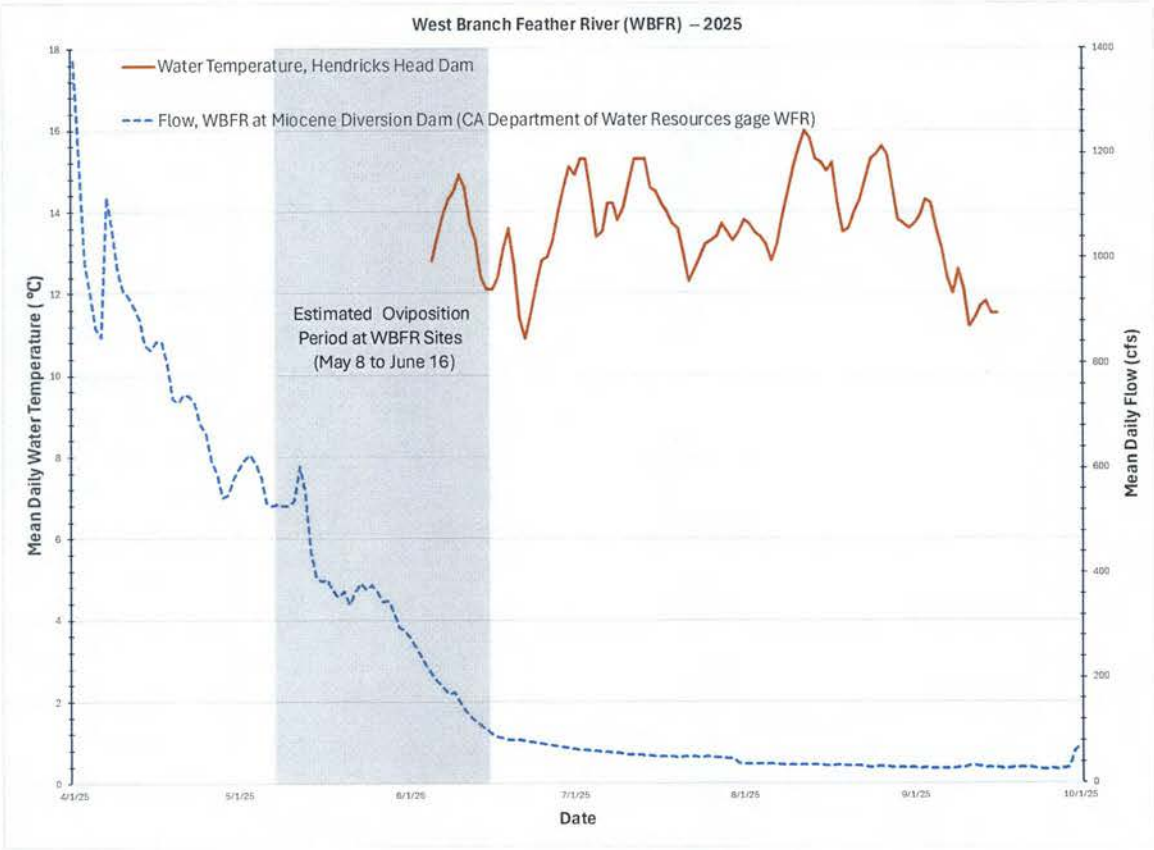

Figure A-2. Flow and water temperature data at locations along the West Branch Feather River, 2025

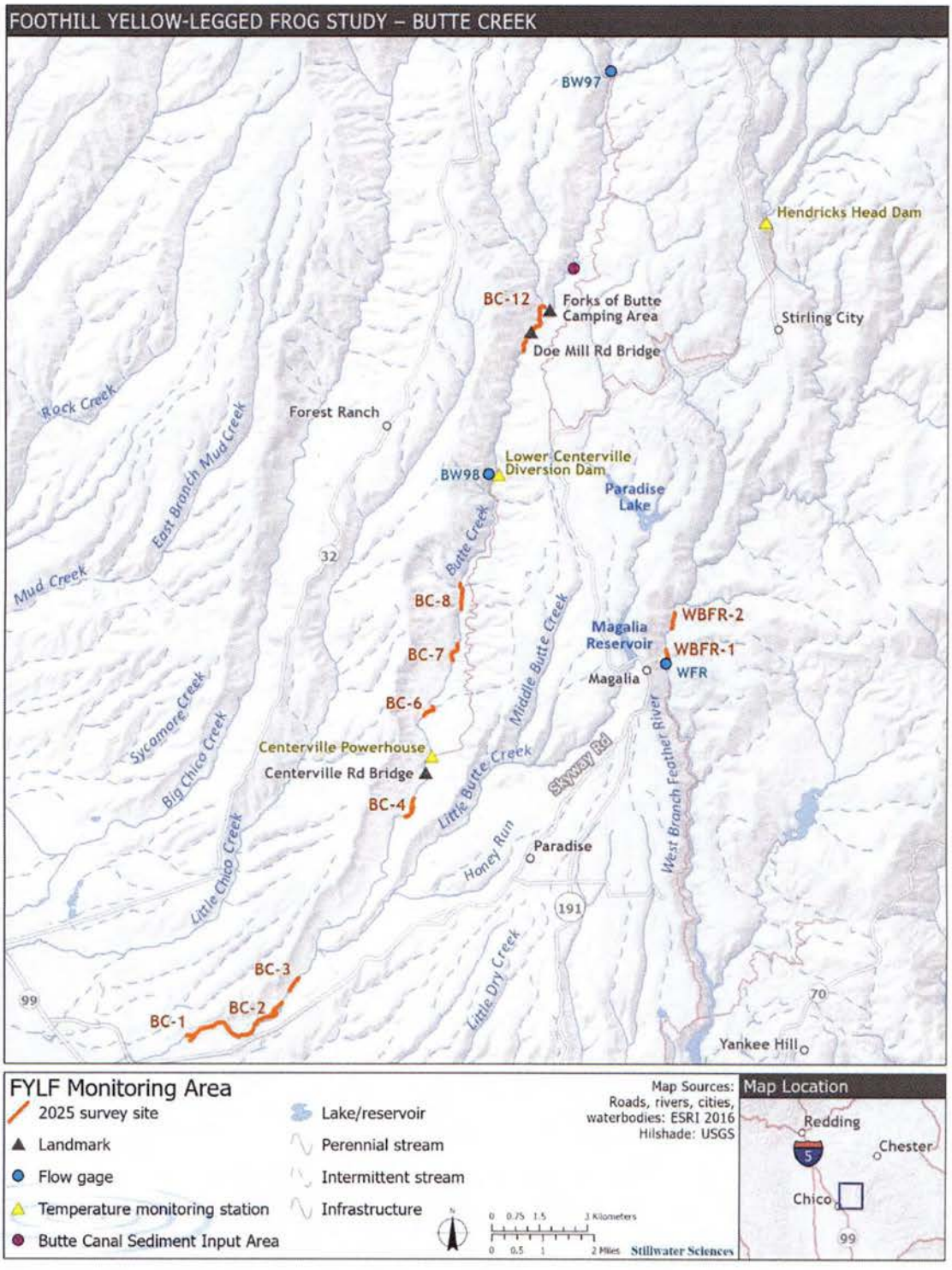

Figure A-3. Butte Creek and West Branch Feather River foothill yellow-legged frog monitoring area, including temperature and flow measurement locations, 2025.

APPENDIX B

NON-TARGET SPECIES OBSERVATIONS

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Figure B-1. Sierra newt (*Taricha sierrae*) egg mass (top left), larva (top right), young-of year (bottom left), and adult (bottom right).

Figure B-2. Sierra newt adult predation on foothill yellow-legged frog (*Rana boylii*) egg mass at Site WBFR-1.

Figure B-3. California toad (*Anaxyrus boreas halophis*) egg mass (top left), tadpoles (top right), young-of-year (bottom left), and adult (bottom right).

Figure B-4. Sierran treefrog (*Pseudacris sierra*) tadpoles (top left), young-of-year (top right), subadult (bottom left), and adult (bottom right).

Figure B-5. American bullfrog (*Lithobates catesbeianus*) first-year tadpole (top left), second-year tadpole (top right), subadult (bottom left), and adult (bottom right).

Figure B-6. Northwestern pond turtle (*Actinemys marmorata*) young-of-year (top left and top right), subadult (bottom left), and adult (bottom right).

Figure B-7. Sierra garter snake (*Thamnophis couchii*) subadult (left) and adult eating a riffle sculpin (*Cottus gulosus*) (right).

Figure B-8. Valley garter snake (*Thamnophis sirtalis fitchi*) subadults.

APPENDIX C

PHOTOGRAPHS OF SURVEY SITES

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Figure C-1. Site BC-1, various locations and survey conditions on May 7 (top left) and September 24 (top right and bottom), 2025.

Figure C-2. Rock weirs at Site BC-1 on May 21 (left) and June 4 (right), 2025.

Figure C-3. Deep inaccessible mid-channel pool at Site BC-1 on May 7, 2025.

Figure C-4. Site BC-2, various locations and survey conditions on May 6 (top) and September 24 (bottom), 2025.

Figure C-5. Large gravel bar with high concentration of foothill yellow-legged frogs (*Rana boylii*) at upstream extent of Site BC-2 on May 6 (left) and September 24 (right), 2025.

Figure C-6. Side channel at Site BC-2 on May 19 (left) and September 24 (right), 2025.

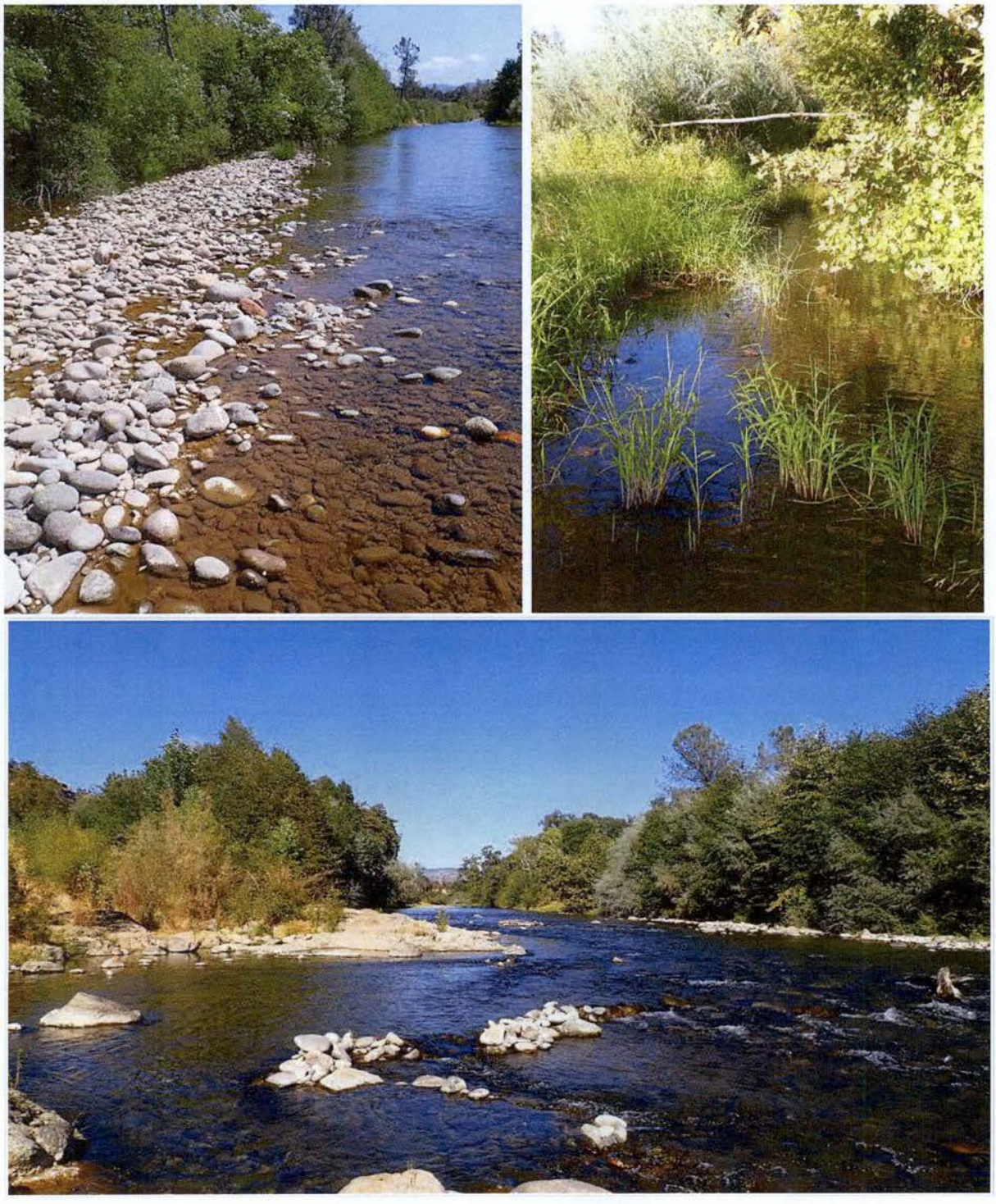

Figure C-7. Site BC-3, various locations and survey conditions on June 5 (top left) and September 24 (top right and bottom), 2025.

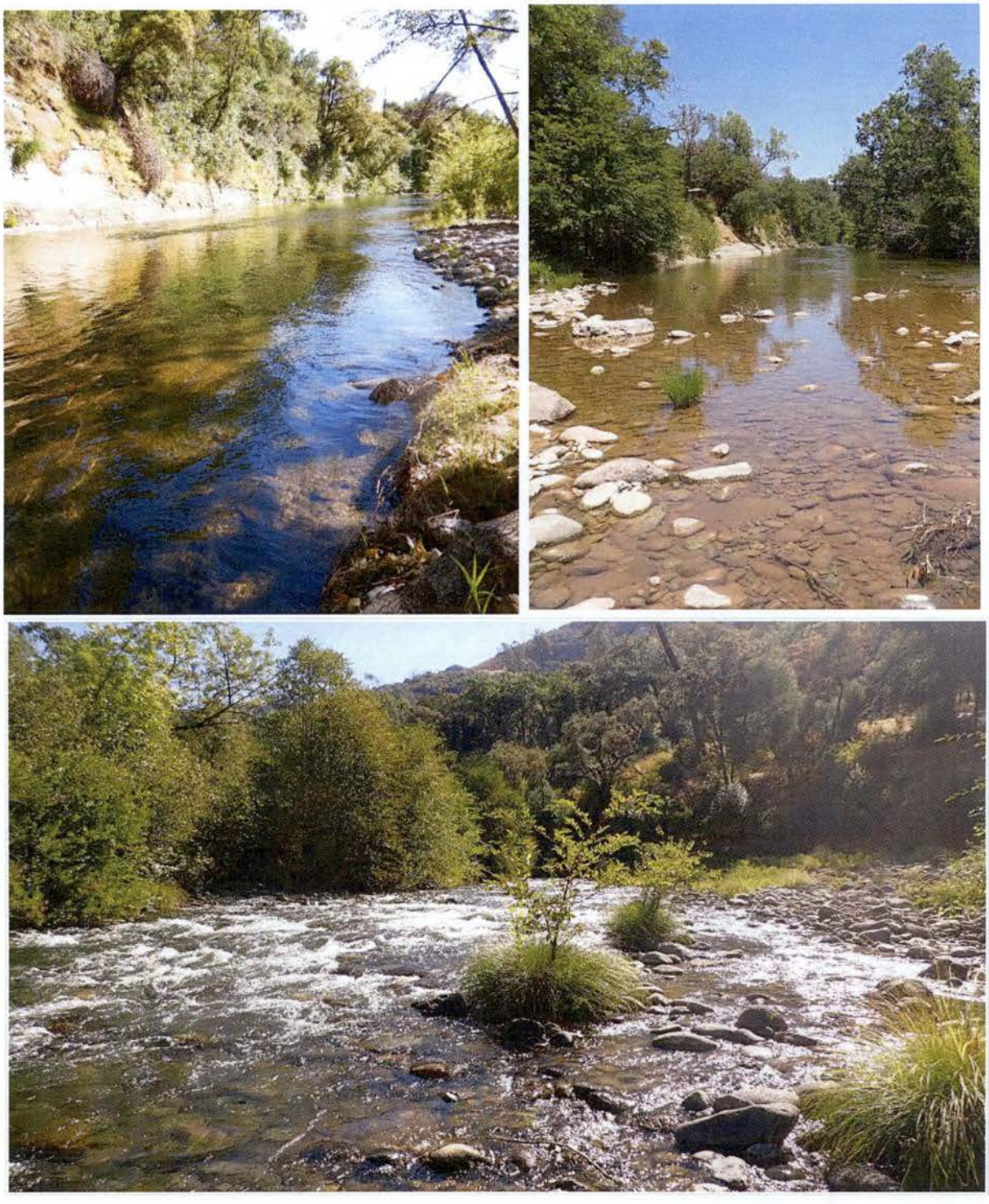

Figure C-8. Site BC-4, various locations and survey conditions on May 19 (top left), June 19 (top right), and August 18 (bottom), 2025.

Figure C-9. Extensive cobble bar and associated side channel and backwater complex at Site BC-4 on May 5 (left) and June 19 (right), 2025.

Figure C-10. Deep mid-channel pool upstream of cobble bar at Site BC-4 on August 28, 2025.

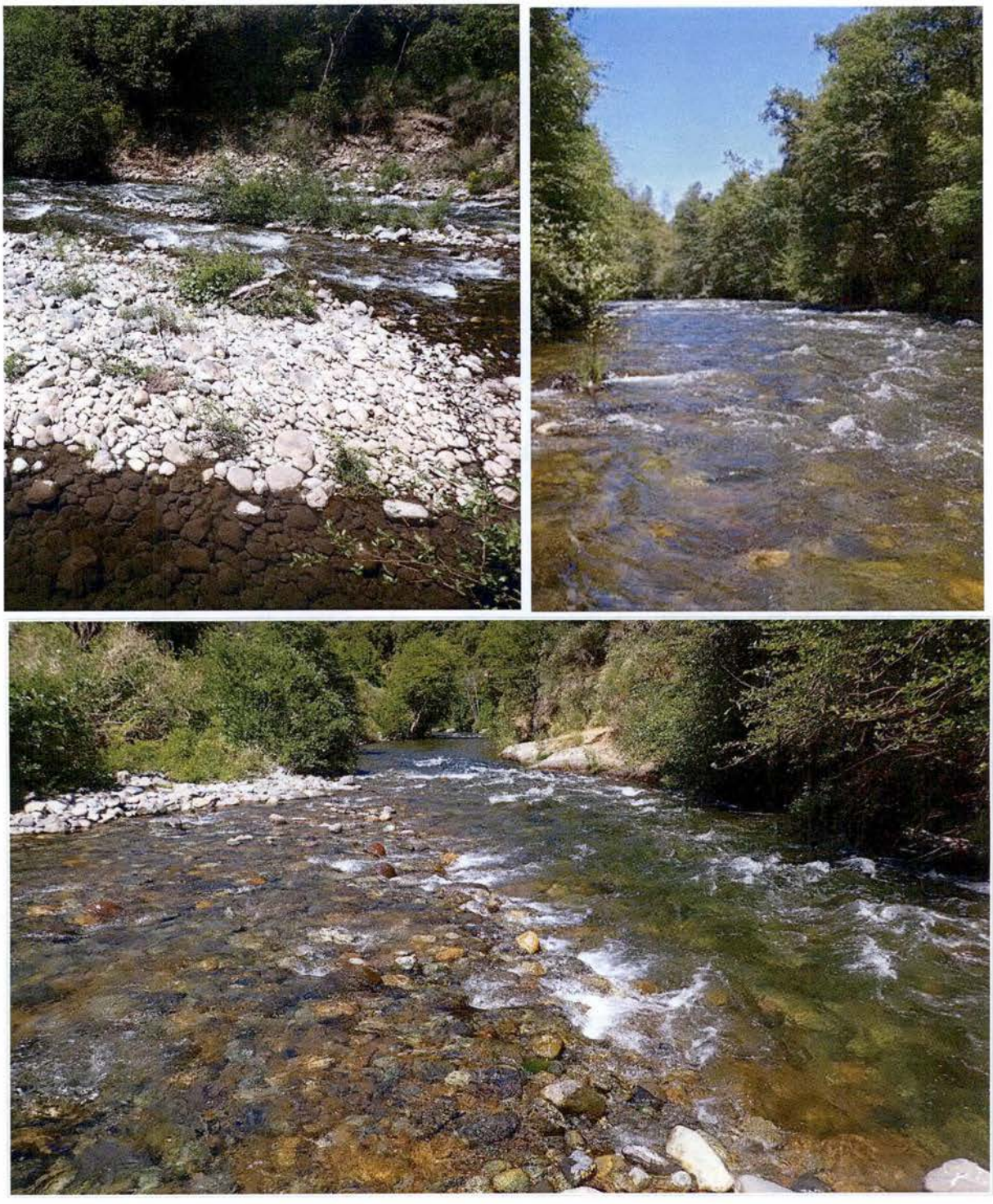

Figure C-11. Site BC-6, various locations and survey conditions on May 7 (top left), May 21 (top right), and June 18 (bottom) 2025.

Figure C-12. The two backwater pools at Site BC-6 on June 4 (left) and June 18 (right), 2025.

Figure C-13. Deep mid-channel pool at Site BC-6 on June 18, 2025.

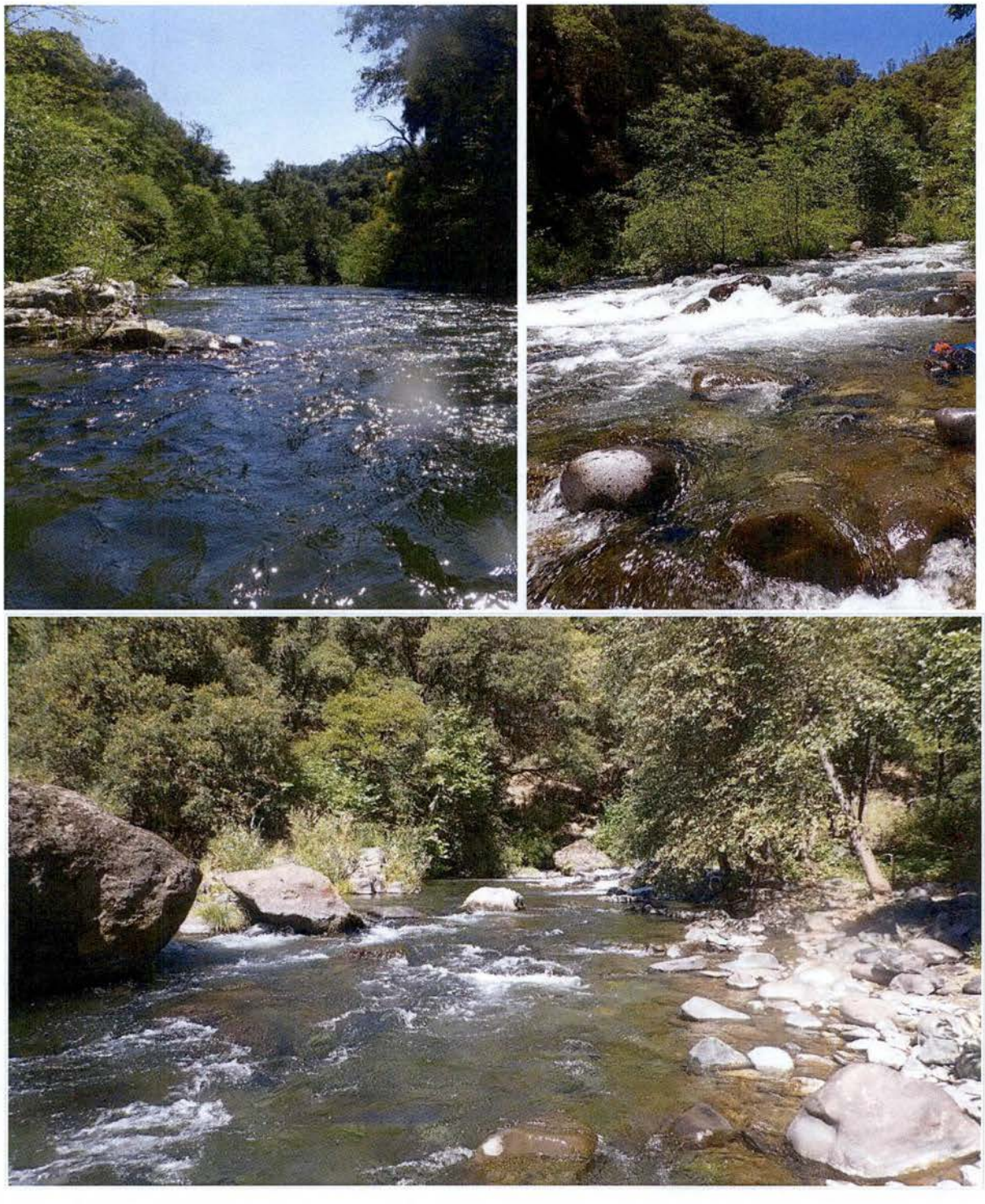

Figure C-14. Site BC-7, various locations and survey conditions on May 20 (top left), June 18 (top right), and September 24 (bottom) 2025.

Figure C-15. Backwater bedrock pools with high concentrations of foothill yellow-legged frog egg masses and tadpoles at Site BC-7 on May 20 (left) and September 24 (right), 2025.

Figure C-16. Deep mid-channel pool at Site BC-7 on September 24, 2025.

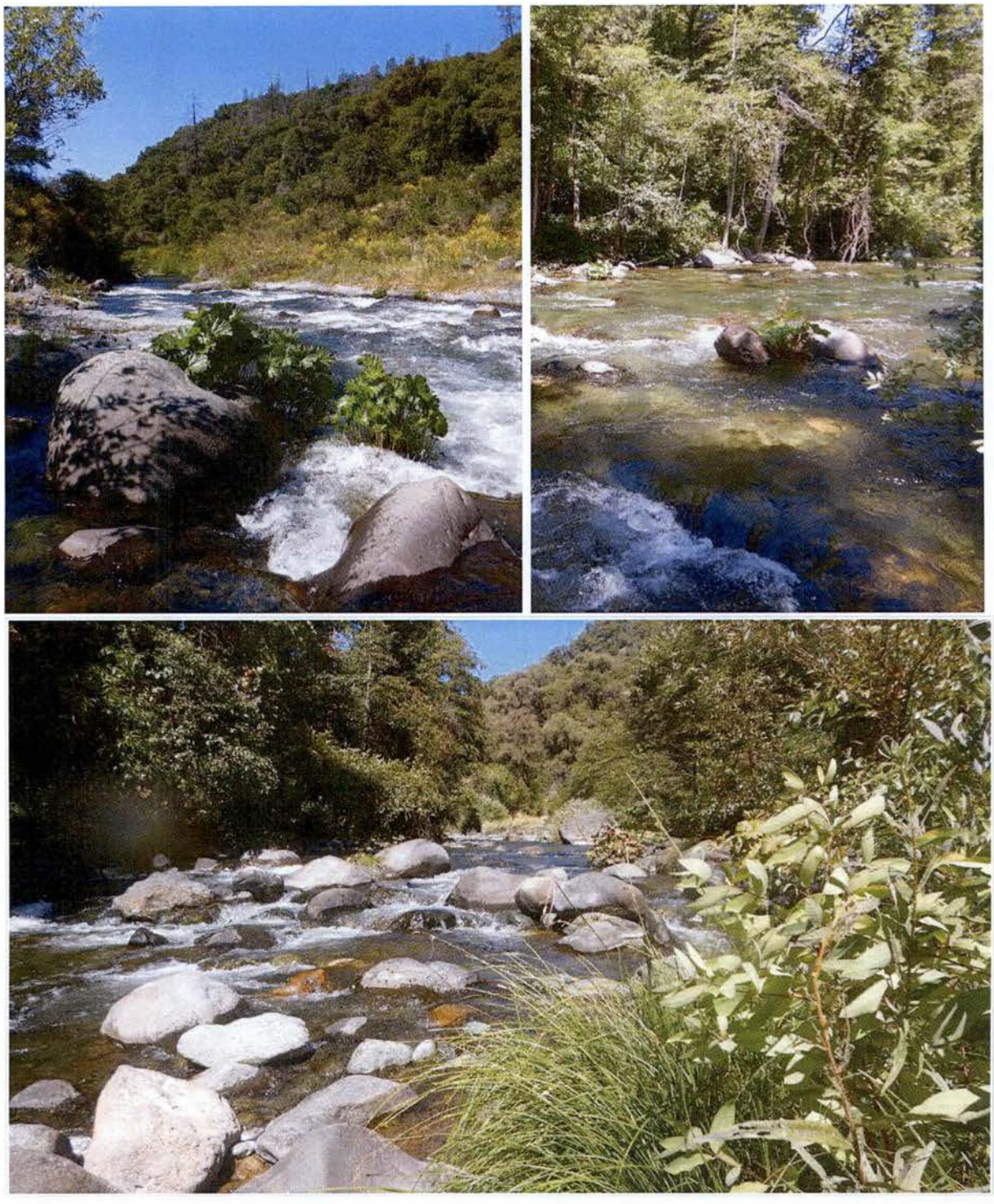

Figure C-17. Site BC-8, various locations and survey conditions on June 3 (top left), June 17 (top right), and September 24 (bottom), 2025.

Figure C-18. Side channel habitats at Site BC-8 on September 23, 2025.

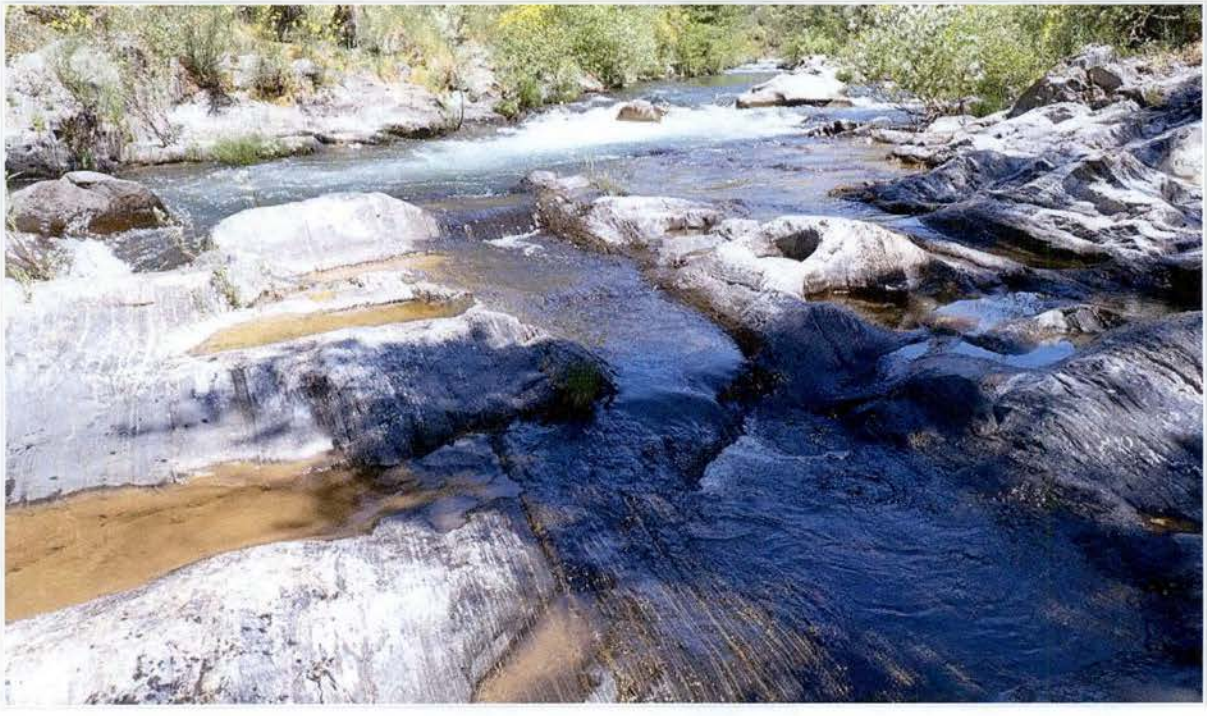

Figure C-19. Bedrock pool at Site BC-8 on June 3, 2025.

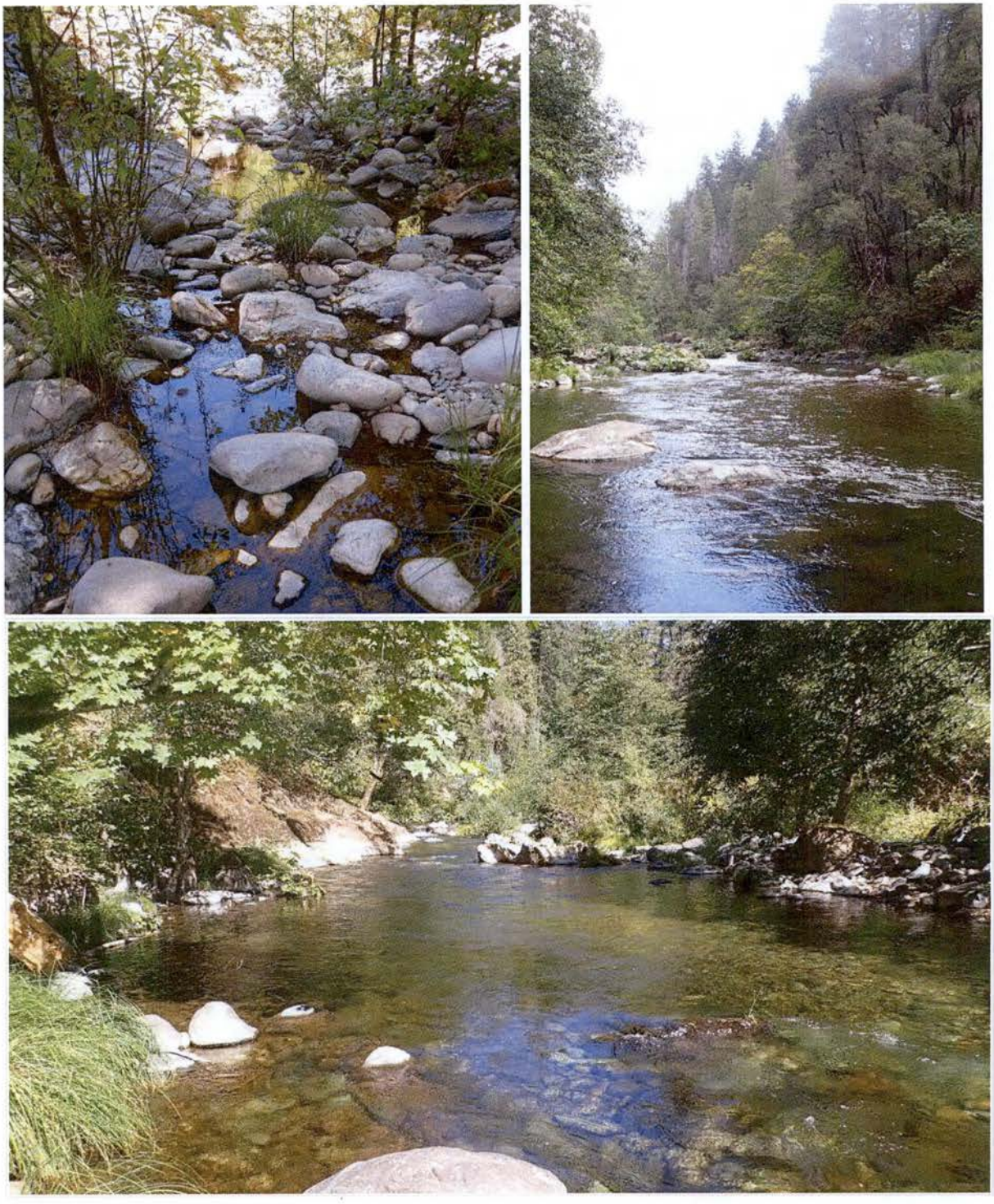

Figure C-20. Site BC-12, various locations and survey conditions on May 20 (top left), August 26 (top right), and September 24 (bottom), 2025.

Figure C-21. Deep run at Site BC-12 on June 3, 2025.

Figure C-22. Bedrock backwater pool at Site BC-12 on June 17, 2025.

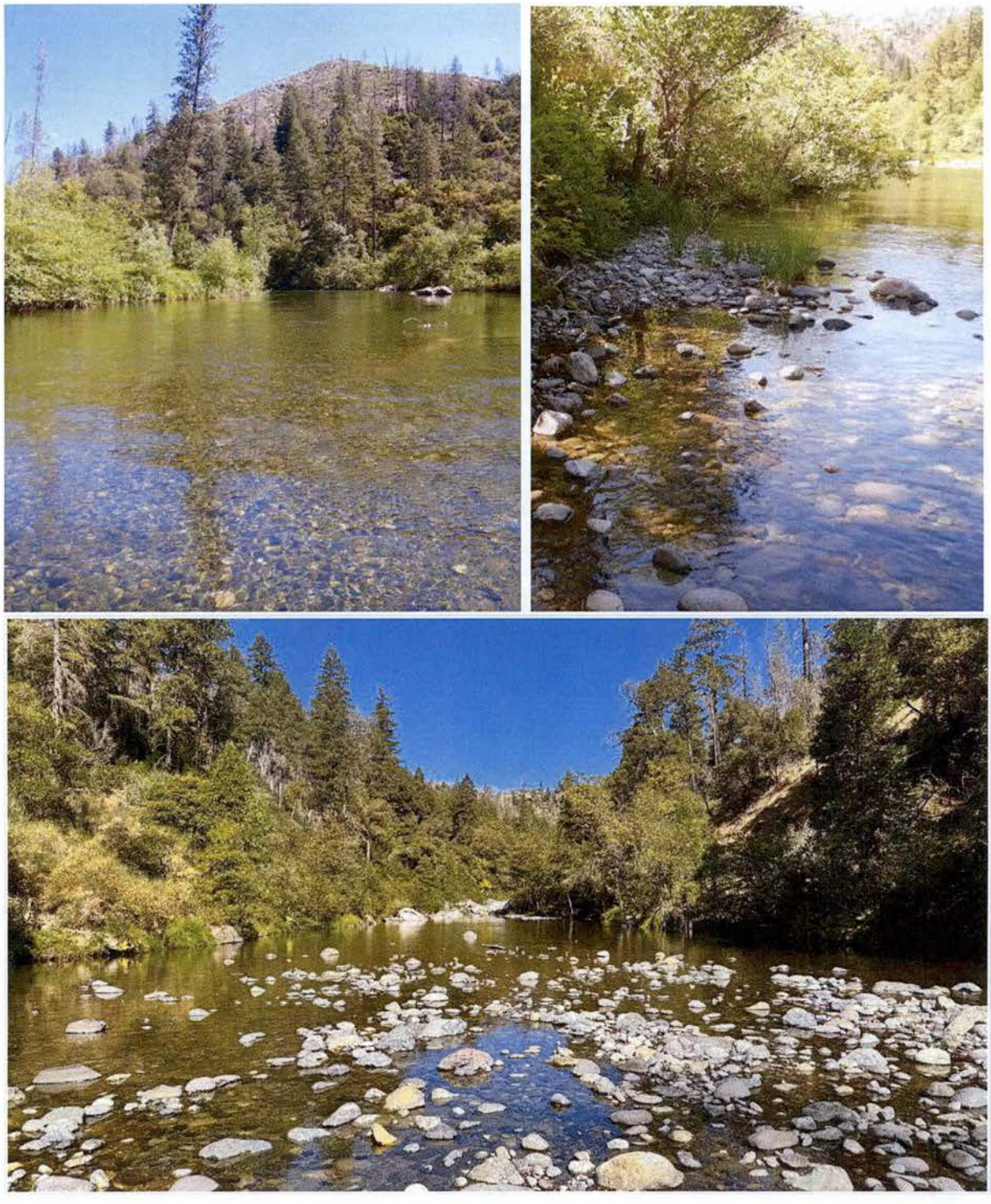

Figure C-23. Site WBFR-1, various locations and survey conditions May 22 (top left), June 16 (top right), and September 26 (bottom) 2025.

Figure C-24. Extensive cobble bar at Site WBFR-1 on September 26, 2025.

Figure C-25. Shallow backwater area at Site WBFR-1 on June 2, 2025.

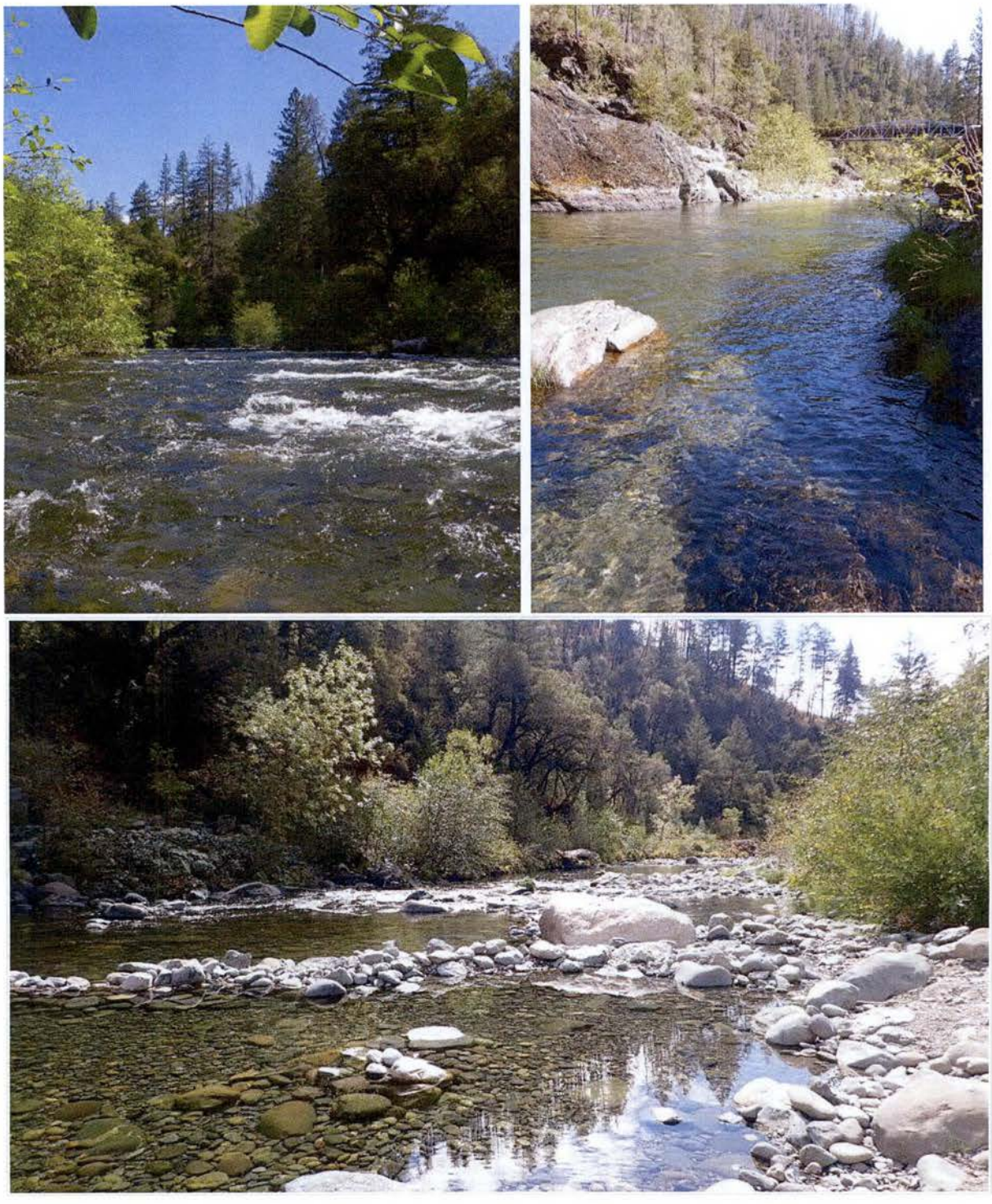

Figure C-26. Site WBFR-2, various locations and survey conditions May 22 (top left), June 16 (top right), and September 25 (bottom), 2025.

Figure C-27. Overhanging and emergent vegetation at Site WBFR-2 on September 25, 2025.

Figure C-28. Large cobble bar with high concentrations of foothill yellow-legged frog egg masses at Site WBFR-2 on June 2, 2025.

APPENDIX D

FOOTHILL YELLOW-LEGGED FROG COUNT DATA ACROSS SURVEY YEARS

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Table D-1. The highest[a] number of foothill yellow-legged frogs (*Rana boylii*) observed at each site during a single survey event for each monitoring year, by life stage.

Site	Life Stage	Year			
		2006[b]	2023[c]	2024[d]	2025[e]
BC-1	Egg mass	0	NS	NS	0
	Tadpole	0	NS	NS	0
	YOY	22	NS	NS	0
	Subadult	5	NS	NS	1
	Adult	0	NS	NS	0
BC-2	Egg mass	0	NS	NS	0
	Tadpole	0	NS	NS	~650
	YOY	5	NS	NS	44
	Subadult	10	NS	NS	6
	Adult	1	NS	NS	3
BC-3	Egg mass	0	NS	0	0
	Tadpole	2	NS	~50	0
	YOY	20	NS	1	8
	Subadult	0	NS	1	10
	Adult	0	NS	0	2
BC-4	Egg mass	0	0	0	0
	Tadpole	785	0	~250	~100
	YOY	19	9	15	~109
	Subadult	0	0	0	2
	Adult	1	1	1	2
BC-6	Egg mass	47	0	0	1
	Tadpole	2340	0	~105	10
	YOY	401	0	25	9
	Subadult	3	0	0	0
	Adult	3	0	1	3

Site	Life Stage	Year			
		2006[b]	2023[c]	2024[d]	2025[e]
BC-7	Egg mass	0	NS	0	69[f]
	Tadpole	473	NS	~157	~15,720
	YOY	229	NS	17	17
	Subadult	2	NS	1	4
	Adult	1	NS	4	14
BC-8	Egg mass	0	NS	0	23[f]
	Tadpole	716	NS	~430	~4,795
	YOY	341	NS	46	~114
	Subadult	6	NS	0	3
	Adult	8	NS	3	4
BC-12	Egg mass	8	0	0	10
	Tadpole	207	1	~200	~2,235
	YOY	5	0	20	17
	Subadult	3	0	0	2
	Adult	11	2	0	7
WBFR-1	Egg mass	15	NS	NS	8
	Tadpole	127	NS	NS	~600
	YOY	326	NS	NS	~559
	Subadult	12	NS	NS	10
	Adult	20	NS	NS	4
WBFR-2	Egg mass	34	NS	NS	39
	Tadpole	94	NS	NS	~2,425
	YOY	90	NS	NS	677
	Subadult	7	NS	NS	29
	Adult	7	NS	NS	66

Notes: ~ = approximately; NS = Not surveyed; YOY = young-of-year

[a] The highest number of foothill yellow-legged frogs observed at each site during a single survey event for each year was used for annual comparisons to account for varying numbers of field surveys across survey years.

[b] In 2006, three surveys were conducted: one in June, one in July, and one in September.

[c] In 2023, two surveys were conducted: one in September and one in October. These data were not used for comparisons because the effort was constrained to two visits targeting YOY as compared with full season surveys in 2006, 2024, and 2025.

[d] In 2024, three to four surveys were conducted: one or two in June (based on safe access early in the month), one in August, and one in September.

[e] In 2025, six surveys were conducted: one or two in June (based on safe access early in the month), one in August, and one in September.

[f] Recently hatched egg masses are included in this egg mass count because they indicate known egg masses laid prior to the first survey.

APPENDIX E

AMERICAN BULLFROG COUNT DATA ACROSS SURVEY YEARS

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Table E-1. The highest[a] number of American bullfrogs (*Lithobates catesbeianus*) observed at each site during a single survey event for each monitoring year, by life stage.

Site	Life Stage	Year[b]		
		2006[c]	2024[d]	2025[e]
BC-1	Egg mass	0	NS	0
	Tadpole	25	NS	~668
	Adult/Subadult	4	NS	11
BC-2	Egg mass	0	NS	0
	Tadpole	10	NS	~220
	Adult/Subadult	0	NS	6
BC-3	Egg mass	0	0	0
	Tadpole	500	~151	~2,000
	Adult/Subadult	1	1	5
BC-4	Egg mass	0	1	0
	Tadpole	0	~200	~320
	Adult/Subadult	0	0	1
BC-6	Egg mass	0	0	0
	Tadpole	0	~300	~1,000
	Adult/Subadult	0	2	3
BC-7	Egg mass	0	0	0
	Tadpole	0	0	0
	Adult/Subadult	0	0	0
BC-8	Egg mass	0	0	0
	Tadpole	0	0	0
	Adult/Subadult	0	0	0
BC-9[f]	Egg Mass	0	0	NS
	Tadpole	0	0	NS
	Adult/ Subadult	0	1	NS
BC-12	Egg mass	0	0	0
	Tadpole	0	0	0
	Adult/Subadult	0	0	0

Site	Life Stage	Year[b]		
		2006[c]	2024[d]	2025[e]
WBFR-1	Egg mass	0	NS	0
	Tadpole	0	NS	0
	Adult/Subadult	0	NS	0
WBFR-2	Egg mass	0	NS	0
	Tadpole	0	NS	0
	Adult/Subadult	0	NS	0

Notes: ~ = approximately; NS = Not surveyed

[a] The highest number of bullfrogs observed at each site during a single survey event for each year was used for annual comparisons to account for varying numbers of field surveys across survey years.

[b] Data for 2023 were not included because the effort was constrained (in sites, time, and site lengths) compared with 2006, 2024, and 2025; three sites (BC-4, BC-6, and BC-12) were surveyed twice in fall (once in September and once in October). No bullfrogs were recorded.

[c] In 2006, three surveys were conducted: one in June, one in July, and one in September.

[d] In 2024, three to four surveys were conducted: one or two in June (based on safe access early in the month), one in August, and one in September.

[e] In 2025, six surveys were conducted: one or two in June (based on safe access early in the month), one in August, and one in September.

[f] Site BC-9 was removed from the monitoring program after one visit in 2024 due to safety concerns.

ENCLOSURE 2

Section	Page No.	Commenter	Comment/Suggested Edits	Related Sentence/Topic (if applicable)	Response	Report updated?
Executive Summary	v	USFWS	Please define or quantify "robust" here	*Key findings indicate that a robust FYLF population persists in Butte Creek, with all life stages—egg masses, tadpoles, young-of-year (YOY), subadults, and adults—observed at most sites.*	Comment addressed by adding text to define a "robust" FYLF population as supporting all life stages as well as breeding and recruitment across most sites with a substantial number of egg masses observed.	Yes
Executive Summary	v	USFWS	We suggest altering language to avoid making conclusions about impacts due to the overall lack of data at this point in time	*Overall, the preliminary study results do not suggest a declining or unstable FYLF population in Butte Creek, with no current indication of long-term population-level impacts attributable to the 2023 canal breach*	Comment noted, with clarifying edits to the report text. The August 15, 2025 FERC Order approving the FYLF Monitoring Plan requires annual evaluation of monitoring results to assess whether a significant loss has occurred or is occurring during the respective year. Consistent with that directive, this report presents interim, data-limited interpretations based on available information, while explicitly acknowledging uncertainty and the need for continued monitoring. Final determinations regarding long-term impacts and mitigation will be made at the conclusion of the study period, as directed by FERC.	Yes
1.0 Background	1-1	USFWS	This is incomplete. Recommend incorporating information about FERC order to develop and implement the monitoring plan along with what FERC ordered should be in each annual report.	*In 2025, PG&E further expanded the FYLF study—per the Foothill Yellow-legged Frog Study Plan: Butte Creek 2025–2028 (PG&E 2025b)—to better assess the population and degree of potential effects of the Butte Canal breach on FYLF in Butte Creek.*	Comment addressed by adding information about the FERC order to develop and implement the monitoring plan along with what FERC ordered should be in each annual report.	Yes
4.0 Results	4-24	USFWS	In the discussion, there's a comparison of bullfrogs observed over time and potential impacts to FYLF population. It might be informative to create a summary table of total American bullfrog observations by site and year that gets added onto each year the monitoring is conducted.	*Table 4-6. Number of American bullfrogs observed by life stage during surveys on Butte Creek and the West Branch Feather River, 2025*	Comment addressed by providing a new table summarizing the highest number of American bullfrogs observed at each site during a single survey event for each monitoring year, by life stage (Appendix E, reference added to the Discussion section). Highest counts were used instead of total counts to account for differences in numbers of survey visits and timing over the years.	Yes, Appendix E
4.2 Habitat Assessments and Transects	4-31	USFWS	For habitat assessment, did surveyors record presence of red fine sediment that is similar to what was released during the canal failure? If so, for each Butte Creek site, it would be helpful to provide information about the presence of that sediment	*Habitat Assessments and Transects*	Comment addressed by adding text noting that surveyors did not observe any red fine sediment (i.e., similar to what was released during the canal failure) at any site during 2025 (or 2024) surveys.	Yes
4.2 Habitat Assessments and Transects	4-31	USFWS	Is this just comparing data from the last 2 years?	*Data collected from established habitat transects showed no evidence of vegetation encroachment that would impact the suitability of FYLF breeding habitat*	This assessment of vegetation encroachment potentially impacting the suitability of FYLF breeding habitat is from comparing habitat transect data collected from the last two monitoring years, as well as qualitative assessments for sites with only one set of habitat transect data. In addition, we also made qualitative comparisons with 2023 data and photos for BC-4, BC-6, and BC-12, and conducted a coarse/qualitative evaluation of 2006 habitat photos as feasible.	Not applicable
4.2.1 through 4.2.10 *(all sites)*	4-31 through 4-45	USFWS	Recommend adding a sentence identifying if vegetation encroachment is impacting the suitability of that site for breeding	(Comment added to all sites)	Comment addressed by adding a sentence to each site identifying if vegetation encroachment is discernably impacting the suitability of that site for breeding.	Yes
4.2.6 Site BC-7	4-39	USFWS	Was this mining claim/mining camp present in 2006?	*An active mining claim and mining camp are associated with the survey site; related impacts include channel manipulation, increased erosion, and anthropogenic debris within the channel.*	There is no sign or mention of a mining camp or claim in the 2006 report and related habitat photos. Also, based on a review of the claim number on the BLM Mineral & Land Records System, it appears a claim in this area was filed in September 2022 (Serial Number CA105787318).	Not applicable
4.2.10 Site WBFR-2	4-45	USFWS	Recommend adding sentence about habitat quality, similar to what was done for all other site descriptions.	*4.2.10 Site WBFR-2*	Comment addressed by adding a sentence about habitat quality for Site WBFR-2.	Yes
5.1 2025 Survey Results	5-1	USFWS	Because of the potential for YOY to migrate between Sites, finding only YOY is not sufficient evidence of breeding here.	*Similarly, although only YOY provided the only possible evidence of breeding at Site BC-3 in 2025, both tadpoles and YOY were observed there in 2006 and 2024 (PG&E 2008, 2025a). It is unclear whether eggs and/or tadpoles were simply undetected during the 2025 survey effort or if YOY migrated from more productive areas (e.g., Site BC-2).*	Comment addressed to clarify by adding "the only possible" to the evidence of breeding at Site BC-3. The preceding and following sentences support the comment that YOY may have migrated from more productive areas, and do not confirm breeding. Also revised first paragraph to reduce the number of sites with evidence of successful breeding from seven to six.	Yes
5.2 Spatial and Temporal Population Demographic Variability	5-2	USFWS	Part of the FERC order states that ther report should include a comparison of the results with 2006 survey data. While this draft report does give a high level written comparison, it could be greatly improved upon. Summary tables (or figures) that include total egg masses, total tadpoles all visits, and total YOY, Juveniles, and Adults observed by site and by year would enable readers to readily make comparisons and better follow the written discussion. The proposed table(s) would be added upon for each year's report, such that next year the tables would have data from 2006, 2023 (very limited data), 2024, 2025, and 2026.	*5.2 Spatial and Temporal Population Demographic Variability*	Comment addressed by providing a new table summarizing the highest number of FYLF observed at each site during a single survey event for each monitoring year, by life stage (Appendix D, reference added to the Discussion section). Highest counts were used instead of total counts to account for differences in numbers of survey visits and timing over the years.	Yes, Appendix D
5.2 Spatial and Temporal Population Demographic Variability	5-3	USFWS	This is a general comment, not necessarily meant to be addressed at this spot in the document. There are some sites at which anthropogenic activities might be impacting FYLF. I understand it's totally outside the scope of this report, however, if these activities are occurring on publicly owned/managed lands, perhaps there'd be some value in being able to pull together some of that information so that CDFW/FWS could reach out and see if it's possible to reduce those direct impacts.	NA	Comment noted. Primary land ownership information by site: BC-1: CDFW; BC-2: Mechoopda Indian Tribe of Chico Rancheria; BC-3: BLM; BC-4: BLM; BC-6: Private; BC-7: BLM; BC-8: PG&E; BC-12: BLM; WBFR-1: Lassen National Forest; WBFR-2: BLM and Private	Not applicable

Section	Page No.	Commenter	Comment/Suggested Edits	Related Sentence/Topic (if applicable)	Response	Report updated?
5.2 Spatial and Temporal Population Demographic Variability	5-3	USFWS	This report has not provided the corresponding data from 2023 and 2024 to have such a strong conclusion. Providing the recommended summary table of total observations at sites by year would be especially helpful.	*If the breach had significantly affected the FYLF tadpole population in 2023, few subadults would be expected in 2024, followed by a reduced number of adults observed in 2025, and subsequently reduced breeding and recruitment in 2026.*	Comment addressed by providing a new table summarizing corresponding data from prior monitoring years (Appendix D).	Yes, including Appendix D
5.2 Spatial and Temporal Population Demographic Variability	5-3	USFWS	While the discussion above provides excellent context to how impacts from bullfrogs might be impacting FYLF, there's not a similar discussion about how/why tadpoles would've survived both the pulse flow of sediment AND sediment covering cobble and algae that remained in place in 2023 until at least the first high flow event.	*If the breach had significantly affected the FYLF tadpole population in 2023, few subadults would be expected in 2024, followed by a reduced number of adults observed in 2025, and subsequently reduced breeding and recruitment in 2026.*	Comment addressed by expanding the Discussion to acknowledge likely localized mortality of FYLF eggs and tadpoles following the 2023 sediment release and to explain how partial tadpole survival is likely despite sediment covering cobble and algae, based on habitat refugia, persistence of periphytic food resources, and the observation of young-of-year FYLF in fall 2023.	Yes
5.2 Spatial and Temporal Population Demographic Variability	5-3	USFWS	Providing the recommended summary table/figure of total observations at sites by year would be especially helpful in backing up this statement. Currently numbers of observations are in different reports. Additionally, survey efforts from 2006 and 2025 were not identical (i.e., different numbers of survey visits at different times of year). I suggest removing definitive language about impacts here.	*However, biologists observed more adult FYLF on Butte Creek sites in 2025 compared with 2024 and 2006, and a similar or substantially higher number of subadult FYLF on Butte Creek sites in 2025 compared with 2006 and 2024 respectively, suggesting no currently discernable impacts from the canal breach on the population.*	Comment (first half) addressed by providing a new table summarizing corresponding data from prior monitoring years (Appendix D). Comment (second half) noted. To account for varying number of survey visits over the years, we used the highest number of FYLF observed at each site during a single survey event for each year for spatial and temporal comparisons. The August 15, 2025 FERC Order approving the FYLF Monitoring Plan requires annual evaluation of monitoring results to assess whether a significant loss has occurred or is occurring during the respective year. Consistent with that directive, this report presents interim, data-limited interpretations based on available information, while explicitly acknowledging uncertainty and the need for continued monitoring. Final determinations regarding long-term impacts and mitigation will be made at the conclusion of the study period, as directed by FERC.	Yes, including Appendix D
5.2 Spatial and Temporal Population Demographic Variability	5-3	USFWS	Recommend including that the FERC order states that monitoring shall occur annually through 2028.	*Continued annual monitoring, including comparison with control sites and historical data, will be useful for detecting any delayed effects and informing whether adaptive management strategies are needed.*	Comment addressed by adding text acknowledging that FYLF monitoring in Butte Creek will continue annually through 2028 as described in the FERC-approved Study Plan and in accordance with agency requirements.	Yes

ENCLOSURE 3

Outlook

RE: [EXTERNAL] FERC 803: Butte Creek FYLF Monitoring Report

From Ramirez-Doble, Sky <S9RV@pge.com>
Date Thu 2/19/2026 2:55 PM
To Weinmann, Sophia@Wildlife <Sophia.Weinmann@Wildlife.ca.gov>
Cc Herman, Andie <AEHb@pge.com>; Young, Megan <MRY2@pge.com>; Cheslak, Edward <EFC3@pge.com>; Reaves, Brittany L <brittany_reaves@fws.gov>; Walther, Janet <JMW3@pge.com>; Joseph, Matthew <MWJA@pge.com>; Holly Burger <burger@stillwatersci.com>; Call, Leslie@Wildlife <Leslie.Call@Wildlife.ca.gov>; Allison, Anna@Wildlife <Anna.Allison@wildlife.ca.gov>; Millsap, Stephanie D <stephanie_millsap@fws.gov>; Puccini, Stephen@Wildlife <Stephen.Puccini@wildlife.ca.gov>; Drummond, Duncan <DGDH@pge.com>

Hi Sophia,

Thank you for the request.

At this time, PG&E is unable to extend the agency comment deadline to February 27, 2026. To meet the March 1, 2026, filing deadline established in FERC's August 15, 2025, Order, PG&E requests that any agency comments on the *2025 Butte Creek FYLF Monitoring Report* be provided by Wednesday, February 25, 2026, for inclusion in the FERC filing. Any comments submitted the week of February 23, 2026, will not be incorporated into the report; however, comments before February 25, 2026, will be included in the consultation record submitted to FERC.

Thank you for your understanding, and please let me know if you have any questions.

Kindly,
Sky Ramirez-Doble
He/Him/His
Hydro License Coordinator | Power Generation
Pacific Gas & Electric Company
c: (530) 250-7002 e: s9rv@pge.com

From: Weinmann, Sophia@Wildlife <Sophia.Weinmann@Wildlife.ca.gov>
Sent: Thursday, February 19, 2026 11:54 AM
To: Ramirez-Doble, Sky <S9RV@pge.com>
Cc: Herman, Andie <AEHb@pge.com>; Young, Megan <MRY2@pge.com>; Cheslak, Edward <EFC3@pge.com>; Reaves, Brittany L <brittany_reaves@fws.gov>; Walther, Janet <JMW3@pge.com>; Joseph, Matthew <MWJA@pge.com>; Holly Burger <burger@stillwatersci.com>; Call, Leslie@Wildlife <Leslie.Call@Wildlife.ca.gov>; Allison, Anna@Wildlife <Anna.Allison@wildlife.ca.gov>; Millsap, Stephanie D <stephanie_millsap@fws.gov>; Puccini, Stephen@Wildlife <Stephen.Puccini@wildlife.ca.gov>
Subject: RE: [EXTERNAL] FERC 803: Butte Creek FYLF Monitoring Report

Hi Sky—

CDFW would like to request a deadline extension on FYLF Monitoring Report comments until Friday, February 27.

I apologize for the delay and appreciate your understanding. Please let us know if the extension is possible.

Best-

Sophia

Sophia Weinmann
(she/her/hers)

Environmental Scientist
Foothill Yellow-legged Frogs

From: Reaves, Brittany L <brittany_reaves@fws.gov>
Sent: Thursday, February 19, 2026 9:14 AM
To: Ramirez-Doble, Sky <S9RV@pge.com>; Weinmann, Sophia@Wildlife <Sophia.Weinmann@Wildlife.ca.gov>; Allison, Anna@Wildlife <Anna.Allison@wildlife.ca.gov>; Call, Leslie@Wildlife <Leslie.Call@Wildlife.ca.gov>; Millsap, Stephanie D <stephanie_millsap@fws.gov>
Cc: Herman, Andie <AEHb@pge.com>; Young, Megan <MRY2@pge.com>; Cheslak, Edward <EFC3@pge.com>; Walther, Janet <JMW3@pge.com>; Joseph, Matthew <MWJA@pge.com>; Holly Burger <burger@stillwatersci.com>
Subject: Re: [EXTERNAL] FERC 803: Butte Creek FYLF Monitoring Report

I've attached the Butte Creek FYLF 2025 Monitoring Report word document with the Service's comments to this email.

Thank you and please let us know if you have any questions.

Brittany Reaves
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
(530) 365-7150
****
I am currently working:
Monday – Thursday

From: Ramirez-Doble, Sky <S9RV@pge.com>
Sent: Thursday, January 22, 2026 5:04 PM
To: Alber, Leslie@Wildlife <Leslie.Alber@wildlife.ca.gov>; Weinmann, Sophia@Wildlife <Sophia.Weinmann@Wildlife.ca.gov>; Reaves, Brittany L <brittany_reaves@fws.gov>; Millsap, Stephanie D <stephanie_millsap@fws.gov>; Allison, Anna@Wildlife <Anna.allison@wildlife.ca.gov>
Cc: Herman, Andie <AEHb@pge.com>; Young, Megan <MRY2@pge.com>; Cheslak, Edward

<EFC3@pge.com>; Walther, Janet <JMW3@pge.com>; Joseph, Matthew <MWJA@pge.com>; Holly Burger <burger@stillwatersci.com>
Subject: [EXTERNAL] FERC 803: Butte Creek FYLF Monitoring Report

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Hello Agencies,

The Butte Creek FYLF Monitoring Report for the 2025 monitoring year is now available for agency review, consistent with Ordering Paragraph (B) of FERC's August 15, 2025, Order. Per the FERC order, the agency review period runs 30 days from today. Please respond to this email with any comments or questions. The final report will be filed with FERC by March 1, 2026. The file is too large for email distribution. It can be accessed at the link below:

Agency Share - Butte Creek FYLF

If you experience any access issues, please contact our consultant, Holly Burger, Stillwater Sciences, who manages the SharePoint permissions.

Kindly,

Sky Ramirez-Doble

He/Him/His

Hydro License Coordinator | *Power Generation*

Pacific Gas & Electric Company

c: (530) 250-7002 e: s9rv@pge.com

ENCLOSURE 4

Outlook

RE: [External] DeSabla Centerville (FERC No. 803) – FYLF Annual Report Filing Issue

From Holly Frank <Holly.Frank@ferc.gov>
Date Tue 3/3/2026 10:45 AM
To Ramirez-Doble, Sky <S9RV@pge.com>; Andrea Claros <Andrea.Claros@ferc.gov>
Cc Drummond, Duncan <DGDH@pge.com>; Joseph, Matthew <MWJA@pge.com>

Thank you Sky,
I'm sorry you've run into issues with uploading the report, thank you for letting us know that you did get some parts submitted and for trying alternatives to getting the last enclosure submitted. I did receive the link you emailed.

For providing a hard copy, submissions sent via the U.S. Postal Service must be addressed to:
Debbie-Anne A. Reese, Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426.

Submissions sent via any other carrier must be addressed to:
Debbie-Anne A. Reese, Secretary
Federal Energy Regulatory Commission
12225 Wilkins Avenue
Rockville, Maryland 20852

The first page of any filing should include docket number P-803.

Thank you!
Holly

Holly Frank
Fish Biologist, FERC DHAC
(202) 502-6833

From: Ramirez-Doble, Sky <S9RV@pge.com>
Sent: Tuesday, March 3, 2026 1:25 PM
To: Andrea Claros <Andrea.Claros@ferc.gov>; Holly Frank <Holly.Frank@ferc.gov>
Cc: Drummond, Duncan <DGDH@pge.com>; Joseph, Matthew <MWJA@pge.com>
Subject: RE: [External] DeSabla Centerville (FERC No. 803) – FYLF Annual Report Filing Issue

Dear Ms. Claros and Ms. Frank,

Thanks for your quick communication on this matter. I wanted to follow up in writing to summarize next steps regarding the Annual Foothill Yellow-Legged Frog (FYLF) Monitoring Report filing for the DeSabla-Centerville Project (FERC No. 803).

As discussed during my call with Ms. Frank on March 3, 2026, at approximately 8:30 a.m., PG&E encountered a technical issue with FERC's eLibrary that prevented us from uploading Enclosure 1 of the report, despite multiple attempts using different file formats and sizes. To meet the filing deadline, PG&E proceeded with submitting the cover letter and Enclosures 2 and 3. PG&E has contacted FERC Online Support and is awaiting further direction on resolving the upload problem. So far, the solutions they recommended have not been successful.

Per Ms. Frank's guidance, this email includes a link to the complete report materials, including Enclosure 1. In addition, Ms. Frank recommended that PG&E submit a hard-copy version of the report. Please confirm the mailing address in response to this email, and I will get a hard copy sent your way.

Please let us know if there are any additional steps you would like us to take in the interim or if there is another way to eFile this report, such as ESFT. We appreciate your assistance and flexibility as we work to complete the filing.

Agency Share - Butte Creek FYLF

Kindly,
Sky Ramirez-Doble
He/Him/His
Hydro License Coordinator | Power Generation
Pacific Gas & Electric Company
c: (530) 250-7002 e: s9rv@pge.com

From: Andrea Claros <Andrea.Claros@ferc.gov>
Sent: Tuesday, March 3, 2026 9:37 AM
To: Ramirez-Doble, Sky <S9RV@pge.com>
Cc: Drummond, Duncan <DGDH@pge.com>; Joseph, Matthew <MWJA@pge.com>
Subject: RE: [External] DeSabla Centerville (FERC No. 803) – FYLF Annual Report Filing Issue

Hello Sky,
Thanks for giving us a heads up of this issue. I would recommend refiling the whole package, with a note in the cover letter explaining that it replaces the previous filing. But if for some reason you prefer, you can also file Enclosure 1 as a supplement to the previous filing, as long as the cover letter is clear in explaining such.

If you need any technical help with elibrary you can contact
FERC Online Support
Hours of Operation 8:00 -5:00 ET | TTY: 202-502-8659
Telephone: 202-502-6652
Toll-free Telephone: 1-866-208-3676
Email: ferconlinesupport@ferc.gov

Thanks

Andrea Claros, Chief Aquatic Resources Branch
Federal Energy Regulatory Commission
Office of Energy Projects
Division of Hydropower Administration and Compliance
202-502-8171

From: Ramirez-Doble, Sky <S9RV@pge.com>
Sent: Tuesday, March 3, 2026 11:24 AM
To: Andrea Claros <Andrea.Claros@ferc.gov>
Cc: Drummond, Duncan <DGDH@pge.com>; Joseph, Matthew <MWJA@pge.com>
Subject: [External] DeSabla Centerville (FERC No. 803) – FYLF Annual Report Filing Issue

⚠ **Caution:** This message does not originate from a known FERC email system. Use caution if this message contains attachments, links or requests for information.

Dear Ms. Claros,

I am writing to inform you of a technical issue we encountered while filing the Annual Foothill Yellow-Legged Frog (FYLF) Monitoring Report for the DeSabla-Centerville Project, FERC No. 803, which was due yesterday in accordance with the Commission's August 15, 2025, Order.

We were able to successfully upload the cover letter and Enclosures 2 and 3 to FERC's eLibrary. However, despite multiple attempts, we were unable to upload Enclosure 1 due to a persistent system error. We attempted several troubleshooting measures, including reducing file size, splitting the document, and converting the file into multiple formats (Word, PDF, TIFF, and JPEG), but encountered the same error each time.

To meet the filing deadline, we proceeded with submitting the materials that could be uploaded. Enclosure 1 is complete and ready for filing, and we intend to submit it as soon as the technical issue is resolved. If there is a preferred alternative method for submitting the remaining enclosure, or if you would like us to re-file the full package once the issue is resolved, please let us know.
We wanted to proactively flag this issue for the record and ensure the Commission is aware that the delay is due solely to a technical filing problem, not the completeness of the report.

Please let me know if you have any questions or would like additional information.

Kindly,
Sky Ramirez-Doble
He/Him/His
Hydro License Coordinator | Power Generation
Pacific Gas & Electric Company
c: (530) 250-7002 e: s9rv@pge.com

Document Content(s)