



State of California
Department of Fish and Wildlife

M e m o r a n d u m

Date: August 13, 2018

To: Sarah Mussulman
Sierra District (Fisheries)
Department of Fish and Wildlife

From: Sierra Harris
Scientific aide
Department of Fish and Wildlife

Cc: Region 2 Fish Files

Re: 2018 Putah Creek Backpack Electrofishing Survey and Demonstration for Lake County Elementary Schools

On May 17, 2018, three California Department of Fish and Wildlife (Department) employees conducted a backpack electrofishing demonstration on Putah Creek (Lake County). The purpose of the demonstration was to inform elementary students as to how the Department uses electrofishing to gather information on fisheries. Multiple electrofishing passes were made on a 75 foot stretch of water at 38° 45' 33.37 N 122 36' 42.67 W situated at 1,083 feet above mean sea level (Figure 1). These passes were in the same location as the 2013 – 2017 surveys.

The shoreline is a mix of grass, rocks, and oak woodland. The creek bottom appears mostly rock. The estimated depth of the creek where the survey was conducted was six inches to one foot. The creek receives water from rain and snowmelt runoff from the Mayacamas Mountain range where it then flows into Lake Berryessa. Rainbow trout (*Oncorhynchus mykiss*) (RT), Sacramento sucker (*Catostomus occidentalis*), riffle sculpin (*Cottus gulosus*), smallmouth bass (*Micropterus dolomieu*), California roach (*Lavinia symmetricus*), green sunfish (*Lepomis cyanellus*), speckled dace (*Rhinichthys osculus*), and Sacramento pikeminnow (*Ptychocheilus grandis*) have been documented in the upper part of Putah Creek before it reaches Lake Berryessa (Ewing 2013, 2014, 2015, 2016, 2017).

Table 1 presents the species, number, mean length and weight, and length ranges for species collected from the 2013 - 2018 surveys.



Figure 1. Putah Creek Electrofishing Transect is highlighted in red and located 675 meters north of Middletown in Lake County, CA.

Table 1. Species composition comparison from Putah Creek E-fishing surveys on May 3, 2013, May 20, 2014, May 20, 2015, May 25, 2016, May 24, 2017, and May 17, 2018.

Mean total length (TL) in millimeters (mm). Average weight was in grams (g)

Species	Number						Mean Total Length					
	2018	2017	2016	2015	2014	2013	2018	2017	2016	2015	2014	2013
California roach	4	5	NA	7	NA	NA	60.0	57.2	NA	64.9	NA	NA
Rainbow trout	8	NA	11	18	22	5	54.0	NA	71.5	62.2	68.7	70.4
Riffle sculpin	8	8	NA	6	3	NA	63.8	78	NA	40.5	54.3	NA
American bullfrog	NA	NA	NA	NA	NA	3	NA	NA	NA	NA	NA	86.7
Foothill Yellow Legged Frog	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Green sunfish	NA	NA	NA	NA	NA	1	NA	NA	NA	NA	NA	57.0
Lamprey	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sculpin spp.	NA	NA	NA	NA	NA	4	NA	NA	NA	NA	NA	68.5
Sacramento pikeminnow	1	NA	NA	1	NA	NA	90.0	NA	NA	46.0	NA	NA
Sacramento sucker	NA	12	NA	8	3	NA	NA	59.5	NA	47.8	35.3	NA
Speckled dace	NA	NA	11	3	NA	NA	NA	NA	45.9	44.0	NA	NA
Total	22	25	22	43	28	13						

Table 1 Continued

Species	Weight***					Length Ranges					
	2018	2016*	2015*	2014	2013	2018	2017	2016	2015	2014	2013
California roach	2.3	NA	3.3	NA	NA	50.0 – 75.0	38.1 - 63.5	NA	60.0 - 72.0	NA	NA
Rainbow trout	2.7	3.9	3.5	3.8	4.7	40.0 – 82.0	NA	60.0 - 83.0	38.0 - 86.0	50.0 - 84.0	50.0 - 95.0
Riffle sculpin	5.4	NA	NA	6.7	NA	50.0 – 87.0	69.9 - 88.9	NA	35.0 - 51.0	40.0 - 83.0	NA
American bullfrog	NA	NA	NA	NA	12.4	NA	NA	NA	NA	NA	35.0 - 115.0
Foothill Yellow Legged Frog	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Green sunfish	NA	NA	NA	NA	5.9	NA	NA	NA	NA	NA	NA
Lamprey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sculpin spp.	NA	NA	NA	NA	4.7	NA	NA	NA	NA	NA	60.0 - 75.0
Sacramento pikeminnow	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sacramento sucker	NA	NA	2.0	NA	NA	NA	25.4 - 120.7	NA	31.0 - 55.0	30.0 - 40.0	NA
Speckled dace	NA	2.4	1.0	NA	NA	NA	NA	24.0 - 70.0	40.0 - 50.0	NA	NA

	2018	2016	2015	2014	2013
Water Temperature	NA	NA	NA	64° F	66° F
Electrofishing time	NA	NA	19.2 min.	NA	NA
CPUE**	NA	NA	2.24	NA	NA

Weights were only taken on rainbow trout 50 mm and greater, 55 mm and greater for Sacramento sucker, 40 mm and greater for speckled dace, 60 mm and greater for California roach

*

** More fish were collected but were not identified, measured, or tallied due to time constraints.

*** No weights were taken in 2017.

The 2018 survey yielded less fish than in 2017 and less than the average of 25 fish found for the six years the surveys have been conducted. Rainbow trout appeared to have made a resurgence after being absent in the previous year. No Sacramento suckers, speckled dace, green sunfish, or American bullfrogs were observed during this survey. Despite the absence of these species, there was more species richness this year than in 2016 and 2017. Two new native species were found this year: a river lamprey (*Lampetra ayresi*) and a foothill yellow-legged frog (*Rana boylei*).

Literature Cited

Ewing, B. 2013. 2013 Putah Creek Backpack Electrofishing Survey and Demonstration for Lake County Elementary Schools. California Fish and Wildlife Region 2 Fish Files. Unpublished.

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