

State of California  
Department of Fish and Wildlife

# Memorandum

**Date:** September 22, 2020

**To:** Sarah Mussulman  
Senior Environmental Scientist; Supervisor  
Department of Fish and Wildlife  
North Central Region  
1701 Nimbus Road, Suite A  
Rancho Cordova, CA 95670

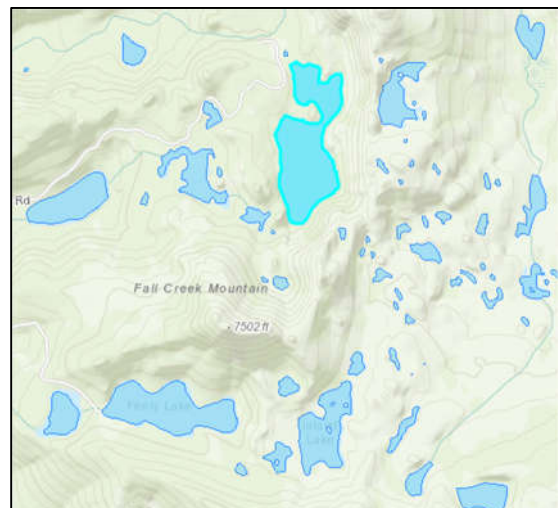
**Cc:** CDFW North Central Region Fish Files

**From:** Mitch Lockhart; Environmental Scientist  
Luc Mitchell; Scientific Aide  
Department of Fish and Wildlife  
1701 Nimbus Road, Suite A  
Rancho Cordova, CA 95670

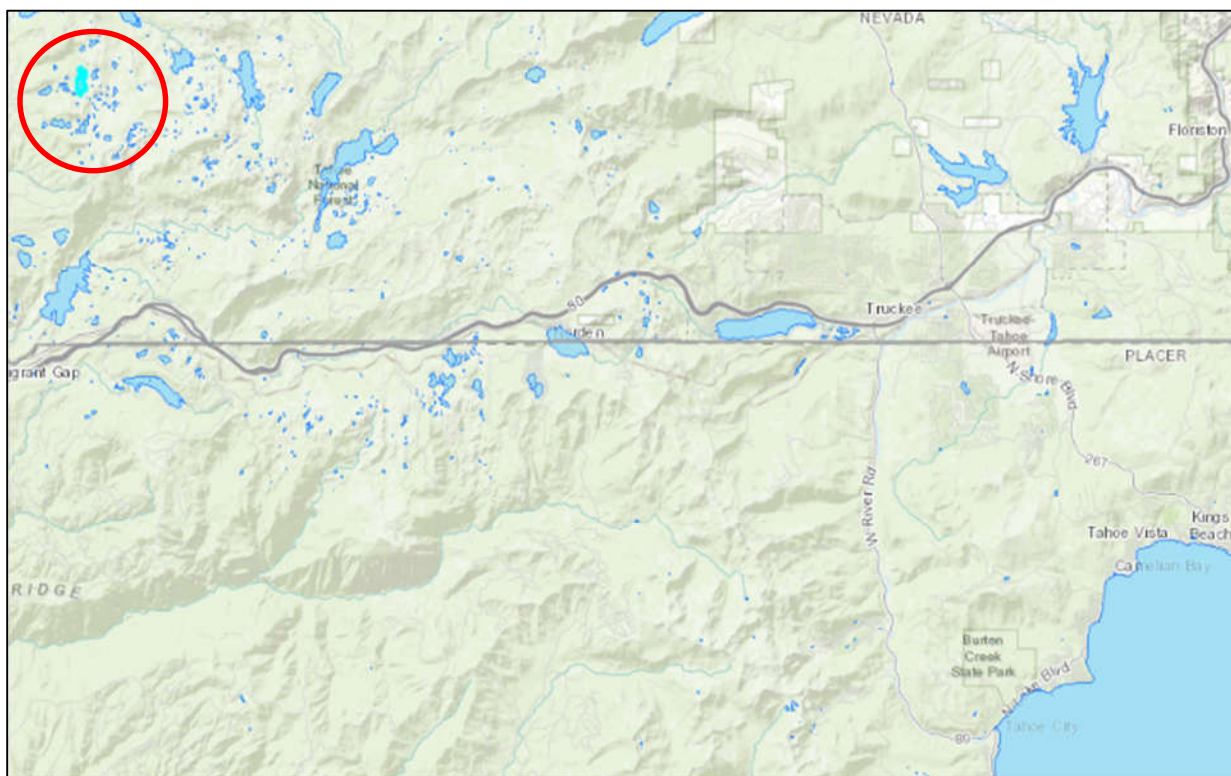
**Subject:** Pre-Stocking Evaluation at Culbertson Lake, Nevada County

Culbertson Lake (Lake ID 12626) is a reservoir in Nevada County found north of Emigrant Gap on Interstate-80 at an elevation of 6,447 feet above sea level (**Figures 1, 2 and 3**). The lake is accessed by the unpaved Bowman Lake Road and Lindsey Lake Road. Pacific Gas & Electric Company (PG&E) manages the lake as part of the Drum-Spaulding Hydroelectric Project (FERC# 2310). The California Department of Fish and Wildlife (CDFW) stocked Culbertson Lake with Brook Trout (*Salvelinus fontinalis*; BK) until 1954. Rainbow Trout (*Oncorhynchus mykiss*; RT) were planted from 1959 to 2017 (**Table 1**).

To assess the status of the sports fishery at Culbertson Lake and determine if continued fish plants are warranted, three CDFW Scientific Aides surveyed Culbertson Lake on June 10-11, 2020. A monofilament gill net (labeled Culbertson Lake A) was set overnight on June 10, 2020 for 12.5 hours. The



**Figure 1.** Close-up overview map of Grouse Ridge Non-Motorized Area, Nevada County. Culbertson Lake is in cyan (CDFW BIOS Viewer, retrieved August 25, 2020).



**Figure 2.** Overview map of Grouse Ridge Non-Motorized Area, Nevada Co. (red circle), in relation to Lake Tahoe and Truckee, California. Culbertson Lake is highlighted in cyan (CDFW BIOS Viewer, retrieved August 25, 2020).



**Figure 3.** Panoramic overview photograph of Culbertson Lake facing west from the peak above Penner Lake (June 11, 2020).

**Table 1.** CDFW Stocking History for Culbertson Lake, Nevada County, from 2006 to 2020.

<i>Year</i>	<i>Species</i>	<i>Number of Fish Planted</i>	<i>Size</i>
2006	RT	10,000	Fingerling
2007	RT	10,000	Fingerling
2009	RT	8,000	Fingerling
2010	RT	9,768	Fingerling
2011	RT	10,000	Fingerling
2012	RT	10,000	Fingerling
2013	RT	10,000	Fingerling
2017	RT	10,000	Fingerling

gill net captured two BK, two RT, and dozens of Brown Bullhead (*Ameiurus nebulosus*; BB) (**Table 2, Figure 4**). One RT escaped the gill net during retrieval and is not represented in these data. A second monofilament gill net (labeled Culbertson Lake B) was set overnight on June 10, 2020 for 10.25 hours and captured 14 BK (**Table 2, Figure 4**).

**Table 2.** Length, weight, sex, and egg stage of trout captured during a gill net survey at Culbertson Lake, Nevada Co., on June 10, 2020.

<i>Species</i>	<i>Length (mm)</i>	<i>Weight (g)</i>	<i>Sex (F/M/U)</i>	<i>Egg Stage</i>
BK	297	220	F	Early & Late
BK	270	200	M	-
BK	285	238	M	-
BK	290	248	M	-
BK	295	250	M	-
BK	294	236	F	Early
BK	280	234	F	Early
BK	280	236	M	-
BK	167	44	M	-
BK	140	24	U	-
BK	163	38	F	Early
BK	140	34	U	-
BK	147	38	U	-
BK	160	38	U	-
BK	300	280	F	Early
BK	265	168	F	Early
RT	352	385	M	-
RT	12- to 18-inch adult escaped from gill net			





**Figure 4.** Photograph of Brook Trout captured during a gill net survey of Culbertson Lake, Nevada Co. on June 10, 2020. Fish captured in gill net Culbertson Lake A are pictured on the left while fish captured in gill net Culbertson Lake B are on the right (June 11, 2020).



**Figure 5.** Alligator Lizard seen during the VES of Culbertson Lake (June 10, 2020).

The Scientific Aides conducted a visual encounter survey (VES) of Culbertson Lake on June 10, 2020, searching for diurnal herpetofauna. It is important to note that the eastern shoreline is characterized by steep, precarious terrain and was not surveyed. One juvenile Alligator Lizard (*Elgaria coerulea* spp.) was encountered (**Figure 5**) but no herpetofauna species of special concern were observed.

Gill net data collected in 2020 show Culbertson Lake continues to supply

recreational angling opportunities to backcountry anglers. Wild BK persist even though CDFW last planted BK in 1954. The gill net sample captured adult-sized and juvenile-sized fish; evidence of a self-sustaining BK population.

The most recent stocking event in Culbertson Lake was an aerial plant of 10,000 triploid, fingerling RT in 2017. The next most recent stocking event was in 2013. Although only two RT were captured in the gill net, there are likely other holdovers in the lake. The low number of adult RT captured suggest that few have survived since planting and more frequent planting events may be necessary to maintain an RT sports fishery at Culbertson Lake. To better assess survivorship and growth of planted RT triploid fingerlings, CDFW should monitor Culbertson Lake annually for two to three years after the next RT fingerling plant. Multiple survey methods should be employed, including hook-and-line sampling from shore and float tube. Monitoring efforts should coincide with cool surface water temperatures when RT are more likely to be accessible by hook-and-line.

## FISH SURVEYING

Trout: rainbow trout (RT), golden trout (GT), cutthroat trout (CT), brown trout (BN), brook trout (BK), hybrids (GT x RT, CT x RT)										DATE: 6/15/2020
Site Name (if available): Culbertson Lake A					Survey Crew: LTM, LMH, JTS					Net depth (m): 4.6
SITE ID: 12626 A		Fish Survey Method: (circle one) gill net hook and line e-fish			Net Location (UTM NAD 83) E: 0704572 N: 4366188			Fish captured? (circle one) <input checked="" type="checkbox"/> insert data below N		
Gill Net near inlet	General location (circle one): near outlet other		Net Set Date: 6/10/2020		Net set time (hhmm): 2009		Net Pull Date: 6/11/2020		Net pull time (hhmm): 0837	
Electrofishing	Location: (inlet or outlet #)		Start coord. (downstream)		End coord. (upstream)		Start (hhmm):		End (hhmm):	
E-fisher Settings (if needed):			Volts:	Hz:	Duty Cycle:		Pulse:	Other:		
Fish #	Species	Tot. Lgth (mm)	Weight (g)	Sex	Egg Stage (F only) Early Ripe Late			Otoliths?	Comments	
1	RT	352	385	M	-	-	-	-		
2	RT	-	-						Jumped from gill net ~12-18 in	
3	BK	265	168	F	✓					
4	BK	300	280	F	✓					
5	BB								Brown Bullhead	
6										
7										
8										
9										
10										
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PLEASE Return to: Isaac Chellman, California Department of Fish and Wildlife, (916) 359-4038; 1701 Nimbus Rd., Rancho Cordova, CA 95670

Field review \_\_\_\_\_ Copied \_\_\_\_\_ Entered \_\_\_\_\_ Proofed \_\_\_\_\_

Data Sheet 2, pg. 1 of 2

**Figure 6.** Data Sheet with gill net data from a survey conducted June 10, 2020, at Culbertson Lake, Nevada Co. This net is labeled Culbertson Lake A and was set near the dam outlet.



## FISH SURVEYING

Trout: rainbow trout (RT), golden trout (GT), cutthroat trout (CT), brown trout (BN), brook trout (BK), hybrids (GT x RT, CT x RT)										DATE: 6/15/2020	
Site Name (if available): Culbertson Lake B				Survey Crew: LTM, CMH, JTS				Net depth (m): 12.7			
SITE ID: 12626		Fish Survey Method: (circle one) gill net hook and line e-fish				Net Location (UTM NAD 83) E: 0704528 N: 4365345		Fish captured? (circle one) (insert data below) N			
Gill Net near inlet near outlet		General location (circle one) other		Net Set Date: 6/10/2020		Net set time (hhmm): 2046		Net Pull Date: 6/11/2020		Net pull time (hhmm): 0700	
Electrofishing		Location: (inlet or outlet #)		Start coord. (downstream)		End coord. (upstream)		Start (hhmm):		End (hhmm):	
E-fisher Settings (if needed):		Volts:		Hz:		Duty Cycle:		Pulse:		Other:	
Fish #	Species	Tot. Lgth (mm)	Weight (g)	Sex	Egg Stage (F only)			Otoliths?	Comments		
1	BK	297	220	F	✓		✓				
2	BK	270	200	M							
3	BK	285	238	M							
4	BK	290	248	M							
5	BK	295	250	M							
6	BK	294	236	F	✓						
7	BK	280	234	F	✓						
8	BK	280	236	M							
9	BK	167	44	M							
10	BK	140	24	N/A							
11	BK	163	38	F	✓						
12	BK	140	34	N/A							
13	BK	147	38	N/A							
14	BK	160	38	N/A							
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Data Sheet 2, pg. 1 of 2

**Figure 7.** Data Sheet with gill net data from a survey conducted June 10, 2020, at Culbertson Lake, Nevada Co. This net is labeled Culbertson Lake B.

**CDFW High Mountain Lakes - Amphibian and Reptile Visual Encounter Survey Data Sheet**

Site ID: <b>12626</b>		Date: <b>06/10/2020</b>		SKY: <input checked="" type="radio"/> Clear <input type="radio"/> Partly Cloudy <input type="radio"/> Mostly Cloudy <input type="radio"/> Overcast <input type="radio"/> Rain <input type="radio"/> Snow <input type="radio"/> Smoke				WIND: Calm <input checked="" type="radio"/> Light <input type="radio"/> Moderate <input type="radio"/> Strong							
Topo Name: (1:24,000)		County: <b>Nevada</b>		Elevation: m ft		If not surveyed, provide reason:		Private Property		Frozen		Not Found		No Access	
Surveyors: <b>JTS LTM</b>				Water Type: <input checked="" type="radio"/> Lake <input type="radio"/> Unmapped pond <input type="radio"/> Marsh/ meadow <input type="radio"/> Spring seep		<input checked="" type="radio"/> Stream (Skip to "STREAMS" on pg. 2)									
Lake Name: (from map) <b>Culbertson</b>		East UTM: <b>(0704596)</b>		North UTM: <b>(4368162)</b>		UTM Zone: <b>10</b>									
Color: <input checked="" type="radio"/> Clear <input type="radio"/> Stained		Water (5 m from shore, Temp 10cm deep): <b>15° @ 1452 F</b>		Air (1 m above water): <b>18° @ 1452 F</b>		Seasonality: <input checked="" type="radio"/> Perennial <input type="radio"/> Ephemeral		Currently Dry? <input type="radio"/> Yes <input checked="" type="radio"/> No							
Survey START time: <b>1501</b>		Survey END time: <b>1620</b>		Total survey duration (min): <b>45</b>		HERPS SEEN? <input checked="" type="radio"/> YES <input type="radio"/> NO		FISH SEEN? <input checked="" type="radio"/> YES <input type="radio"/> NO							
*FOR LAKES/PONDS/MEADOWS: ALSO SURVEY FIRST 200 m of INLETS and OUTLETS. RECORD DATA SEPARATELY IN THE "STREAMS" SECTION ON PG. 2															

HERP SPECIES	# adults	# subadults	# metamorphs	# larvae	# egg m.	# swabs	Survey Method
<b>Alligator lizard</b>		<b>1</b>					Visual Trapped
Calling? Y N							Aural Hand Collected
							Amp Net Incidental
							Visual Trapped
Calling? Y N							Aural Hand Collected
							Amp Net Incidental
							Visual Trapped
Calling? Y N							Aural Hand Collected
							Amp Net Incidental
							Visual Trapped
Calling? Y N							Aural Hand Collected
							Amp Net Incidental

**FISH SPECIES** (circle species seen, if known): BK (brook trout), BN (brown trout), CT (cutthroat trout), GT (golden trout), RT (rainbow trout), HYBRID (e.g., GT x RT), OTHER (e.g., minnows)

**Amphibians:** S. Long-toed Salamander (AMMA); Yosemite Toad (ANCA, fmlly BUCA); Sierran Treefrog (HYSI, fmlly PSRE or HYRE); Sierra Nevada Yellow-legged Frog (RASI)

**Amph. less common in HML:** CA Toad (ANBO, fmlly BUBO); Bullfrog (RACT); Cascades Frog (RACA); CA Red-legged Frog (RADR); Sierra Newt (TASI, fmlly TATO)

**Reptiles:** Sierra Gartersnake (THCO); Mountain Gartersnake (THEL); Valley Gartersnake (THSI); Western Pond Turtle (EMMA, fmlly CLMA)

PHOTOS	Photo Number	Camera	Time	Date (yyyy-mm-dd)	UTM E	UTM N	Comments
Overview	<b>JTSP1952</b>	<b>P</b>	<b>1952</b>	<b>2020-Jun-10</b>			<b>filed as 12626</b>
Herps	<b>JTSP1604</b>	<b>P</b>	<b>1604</b>	<b>2020-Jun-10</b>			<b>Alligator lizard caught in net</b>
Other							

**SITE SKETCH:**

**NOTES:**

East side of lake was unsurveyed because of steep cliffs

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Herp Data Sheet, pg. 1 of 2

**Figure 8.** Data Sheet with Visual Encounter Survey data from a survey conducted June 10, 2020, at Culbertson Lake, Nevada Co. No herpetofauna species of concern were seen during the VES.