State of California Department of Fish and Wildlife

## Memorandum

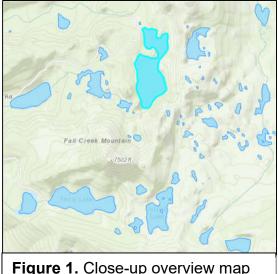
Date: September 22, 2020

- 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

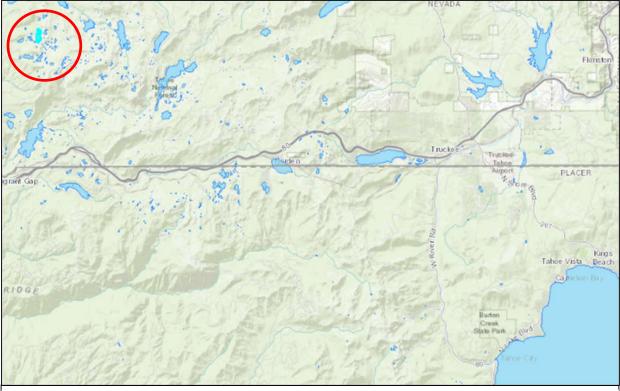
Culbertson Lake (Lake ID 12626) is a reservoir in Nevada County found north of Emigrant Gap on Interstate-80 at an elevation of 6,447 feet above sea level (**Figures 1**, **2** and **3**). The lake is accessed by the unpaved Bowman Lake Road and Lindsey Lake Road. Pacific Gas & Electric Company (PG&E) 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



of Grouse Ridge Non-Motorized Area, Nevada County. Culbertson Lake is in cyan (CDFW BIOS Viewer, retrieved August 25, 2020).

(labeled Culbertson Lake A) was set overnight on June 10, 2020 for 12.5 hours. The



**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).

C	Jounty	, 110111 2000	10 2020.	
}	Year	Species	Number of Fish Planted	Size
2	2006	RT	10,000	Fingerling
2	2007	RT	10,000	Fingerling
2	2009	RT	8,000	Fingerling
2	2010	RT	9,768	Fingerling
2	2011	RT	10,000	Fingerling
2	2012	RT	10,000	Fingerling
2	2013	RT	10,000	Fingerling
2	2017	RT	10,000	Fingerling

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

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.

			Sex	
Species	Length (mm)	Weight (g)	(F/M/U)	Egg Stage
BK	297	220	F	Early & Late
BK	270	200	М	-
BK	285	238	М	-
BK	290	248	М	-
BK	295	250	М	-
BK	294	236	F	Early
BK	280	234	F	Early
BK	280	236	М	-
BK	167	44	М	-
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	М	-
RT	12- to 18-ir	nch adult esca	aped from gi	ill 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.

Frout: ra	inbow trout (RT),	golden trout (GT),	cutthroat trout (CT	brown t	rout (BN),	micmi	(BK), hybrids	(GT x RT, C	T x RT)	DATE 6115120
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Electrofis		tion: or outlet #)	Start coord. (dov	instream) E N	End coo	rd. (upstream)	E		m): Enc	i (hhmm): On Time (sec):
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**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.

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**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.

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