

Memorandum

Date: 11/24/2020

To: Sarah Mussulman
Senior Fisheries Supervisor, Region 2 Sierra District
Department of Fish and Wildlife

From: Ben Ewing
District Fishery Biologist (Alpine, Amador, Calaveras, and Lake Counties)

Subject: **Hellhole Lake (14731) Fish Survey**

On July 21 and 22, 2020, California Department of Fish and Wildlife (Department) personnel and one volunteer completed a fish survey at Hellhole Lake. The purpose of the survey was to determine if any fish were present from prior stockings, and to assess if the lake could be added to the Department fish stocking list.

Hellhole Lake is a small lake in Alpine County located at 38.617131 N, 119.884211 W, situated at 7,663 feet above mean sea level (**Figure 1**). The majority of shoreline is a mix of rock, grasses, and conifers (*Pinopsida* class) (**Figures 2 and 3**). The lake bottom appears mostly made up of vegetation. There does not appear to be a significant inlet or outlet to the lake. Hellhole Lake receives water from rain and snowmelt runoff from the immediate area and possibly an underground spring. Hellhole Lake has historically received fingerling-size stockings of Steelhead/Rainbow Trout (*Oncorhynchus mykiss*), Lahontan Cutthroat Trout (*Oncorhynchus clarkii henshawi*), and Golden Trout (*Oncorhynchus mykiss aguabonita*), with the last recorded allotment of Golden Trout in 2000. A Department visual encounter survey (VES) for diurnal amphibians and a gill net survey in 2003 captured three Golden Trout, with no amphibians observed (High Mountain Lakes (HML) Database). A Department VES in 2010 found Sierran Treefrog (HYRE) (*Pseudacris sierra*) at Hellhole Lake with no Golden Trout collected (HML Database). In May and September of 2012, a VES was done at Hellhole Lake in which HYRE were seen in May, but not in September. No fish surveys were conducted in 2012.

A 120 foot long variable mesh size gillnet was set at 15:55 on July 21, on the western part of the lake's shoreline extending towards the middle of the lake (**Figures 4 and 5**). Air temperature was 81.6°F. The gillnet was pulled at 12:00 on July 22. No fish were collected.



Figure 1. Hellhole Lake, Alpine County. Hellhole Lake is also indicated by beige dot in smaller data frame in relation to California.

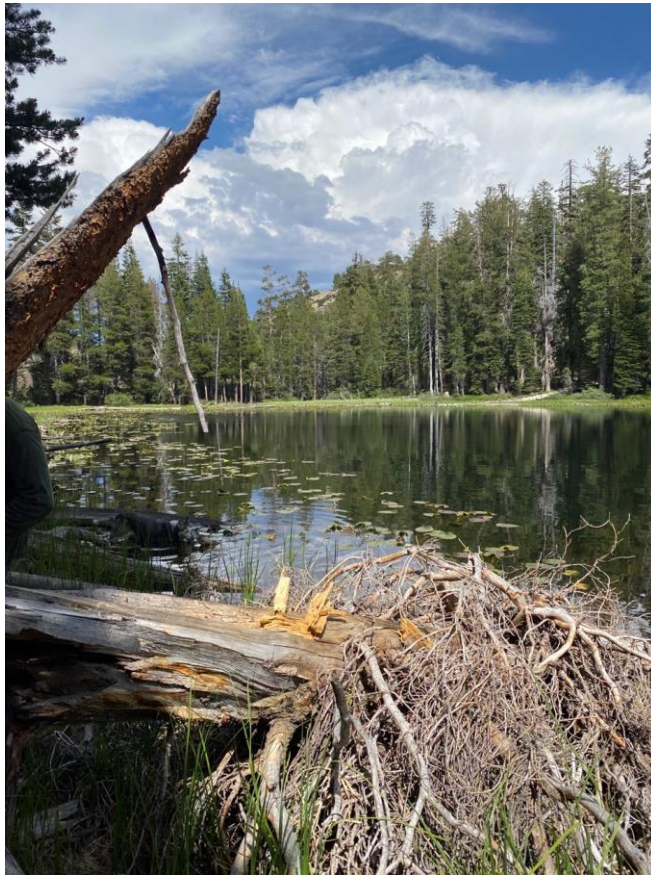


Figure 2. Hellhole Lake, Alpine County, CA (7/21/2020). (Photo by D. Hennessy)



Figure 3. Hellhole Lake, Alpine County, CA (7/21/2020). (Photo by D. Hennessy)



Figure 4. Hellhole Lake Gillnet Location on July 21 and 22, 2020.



Figure 5. Gillnet being deployed at Hellhole Lake on July 21, 2020. (Photo by D. Hennessy)

No special status herpetofauna have been documented at Hellhole Lake (California Natural Diversity Database 2020). However, SNYLF have been documented at Hellhole Lake's outlet as well as a nearby pond to the southwest (Lockhart and Mussulman). Hellhole Lake is also listed as an amphibian management area in the Jeff Davis Creek Management Plan (Lockhart and Mussulman). Based on the results of the evaluations completed, a pre-stocking evaluation will not be written at this time to add Hellhole Lake back to the Department fish stocking list.

Literature Cited:

1. California Department of Fish and Wildlife, High Mountain Lakes Database, November 19, 2020 Accessed by B. Ewing, CDFW.
2. California Natural Diversity Database. November 24, 2020 Accessed by B. Ewing, CDFW.
3. Mussulman, S. and M. Lockhart. Jeff Davis Creek Aquatic Biodiversity Management Plan. 2014. California Department of Fish and Wildlife.
<http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=84128>