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### Lower Bear River Reservoir (15004) Amphibian Survey

On July 9 and September 4, 2019, California Department of Fish and Wildlife (Department) completed an amphibian survey at Lower Bear River Reservoir (Lower Bear), Amador County. The purpose of the survey was to determine if any special status amphibian taxa were present, and to use these data to determine if stocking Lower Bear would result in impacts to special status species, specifically Sierra Nevada Yellow-Legged Frog (*Rana sierra*, SNYLF).

Lower Bear is a 710-acre lake located at 38.540500, 120.243385 W, situated at 5,820 feet above mean sea level. The shoreline is a mix of bedrock, sand, and mixed conifer forest (Figure 1). The lake bottom appears mostly mud and various sized rock substrate. When Lower Bear spills, water drains into the Bear River. Lower Bear receives water from rain and snowmelt runoff from the Bear River, immediate area, and multiple small tributaries. Lower Bear historically received stockings of Brook Trout (*Salvelinus fontinalis*), Rainbow Trout (*Oncorhynchus mykiss*, RT), Lahontan Cutthroat Trout (*Oncorhynchus clarki henshawi*), Brown Trout (*Salmo trutta*, BN), Kokanee Salmon (*Oncorhynchus nerka*), and Lake Trout (*Salvelinus namaycush*, LT), with the last recorded stocking of RT and BN in 2019.



Figure 1. Lower Bear River Reservoir (9/4/2019) (Photo by B. Ewing).

One Department biologist conducted a visual encounter survey (VES) at Lower Bear. The biologist slowly circumambulated the lake looking for diurnal amphibians and reptiles (Fellers and Freel 1995). On July 9, 2019, the VES began at 10:30 and ended at 15:34 with a total survey duration of 88 minutes. Some of this time was used shuttling to accessible survey locations on the shore, surveying inlets (which were recorded separately), and a lunch period. The air temperature was 66.4°F (19.1°C) at 10:25 under clear skies. Water conditions were relatively clear, with visibility to about 10 feet. There was little to no breeze on the water, producing relatively flat water conditions and unimpeded views into the water. Water temperature was 64.4°F (18.0°C) at 10:28. On September 4, 2019, the VES began at 13:39 and ended at 15:15 with a total survey duration of 81 minutes. The air temperature was 73.7°F (23.2°C) at 13:00 under partly cloudy skies. Water conditions were relatively clear, with visibility to about 10 feet. There was little to no breeze on the water, producing relatively flat water conditions and unimpeded views into the water. Water temperature was 70.8°F (21.6°C) at 13:00. Due to the large size of Lower Bear and the amount of steep bedrock and difficult shoreline terrain to navigate, the biologist was not able to survey Lower Bear's entire shoreline (Figure 2).



Figure 2. Lower Bear River Reservoir (9/4/2019) (Photo by B. Ewing).

The transects surveyed are in red in the attached map (Figure 3). In addition to the steep bedrock sections, areas that had campgrounds, next to a road, and/or cabins, weren't sampled due to the close proximity to human disturbance. No amphibians were observed.



Figure 3. Lower Bear River Reservoir Visual Encounter Survey Transects (7/9/2019 and 9/4/2019).

Due to the absence of special status amphibian species and the presence of a persistent LT population, Lower Bear is suitable to stock (Ewing 2018). The Department will stock catchable-size RT and BN to create a put and take fishery for recreational anglers along the heavily used Highway 88 corridor.

Literature Cited:

1. Ewing, B. Summary Report of Roving Creel Surveys (2012 - 2013) and 2015 - 2017 Angler Survey Box Analysis at Lower Bear River Reservoir, Amador County. California Department of Fish and Game; 6/11/2018. Available from: <http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=158954>

2. Fellers, G. M. and K. L. Freel. 1995. A standardized protocol for surveying aquatic amphibians. National Biological Service Cooperative Park Studies Unit, University of California Division of Environmental Studies, Davis, CA. Technical Report No. NPS/WRUC/NRTR95-01 (UC CPSU TR # 58).



