

Memorandum

Date: December 01, 2015

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Subject: Red Lake, Alpine County, Gill Net Survey results and Fishery Management, 2015

On July 16 and 17, 2015, California Department of Fish and Wildlife (CDFW) personnel completed a gill net survey at Red Lake (Alpine County) (Figure 1). The purpose of the survey was to determine if the stocked Lahontan cutthroat trout (*Oncorhynchus clarki henshawi*, LCT) are surviving over winter and to determine the extent of the population.

Red Lake is an 85 acre lake located at 38° 41' 57.24 N 119° 58' 26.16 W. It was historically managed as a brook trout (*Salvelinus fontinalis*, BK) and LCT fishery. In 2011 the management direction changed to a LCT fishery only. Red Lake has been receiving LCT brood stock plants from Heenan Lake since 2009 as well as sub-catchable LCT from Heenan Lake eggs raised by CDFW at American River Trout Hatchery.

With large numbers of forage fish visible along the shoreline, it was concluded by CDFW staff that a high probability of catching by-catch species was possible. To limit unnecessary fish mortality, nets were checked every hour over the four hour sample period. The non-game fish caught during the survey were Lahontan reddsides (*Richardsonius egregius*, LRS), Tahoe sucker (*Catostomus tahoensis*, SKR-T), speckled dace (*Rhinichthys osculus*, SPD) and tui chub (*Gila bicolor*, TC). A total of 293 fish were caught in the gill nets (Table 1). Only three LCT were caught with a mean total length of 275.5 mm (Figure 2). Length-frequency histograms for all non-game fish can be seen in Figures 3-6.

There are many variables that may have kept CDFW from successfully capturing LCT. Checking the net every hour did not allow enough time for the gill nets to be as effective as possible. While pulling the nets up during checks, some fish were able to escape, including one confirmed LCT. Additionally, conducting the survey during the day, instead of typically soaking the nets overnight, may have decreased the likelihood of collecting LCT.

Both visual and hook and line surveys were performed in the beaver dammed ponds near the east inlet (Figure 1) as they were too shallow to set any nets and the mud did not allow for any wading. No fish were seen or caught while surveying the ponds. Further assessments need to be made to determine the population structure of LCT in Red Lake which should include additional gill net surveys. Both afternoon, to compare to this study, and overnight gill nets should be set.



Figure 1. Placement of gill nets (3) on Red Lake, July 2015

Table 1. Breakdown of the number of each species caught in the Red Lake, July 2015, gillnet survey

Species	Total Caught
Lahontan Cutthroat	3
Tui chub	114
Speckled dace	10
Tahoe sucker	61
Lahontan redbreast	105
Total	293

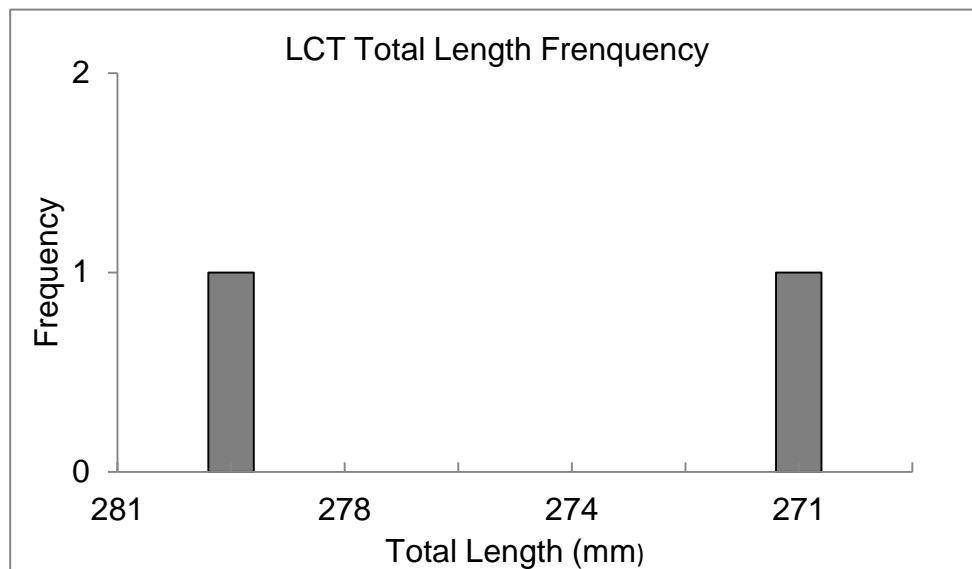


Figure 2. Total length-frequency histogram of Lahontan cutthroat trout caught in Red Lake, July 2015.

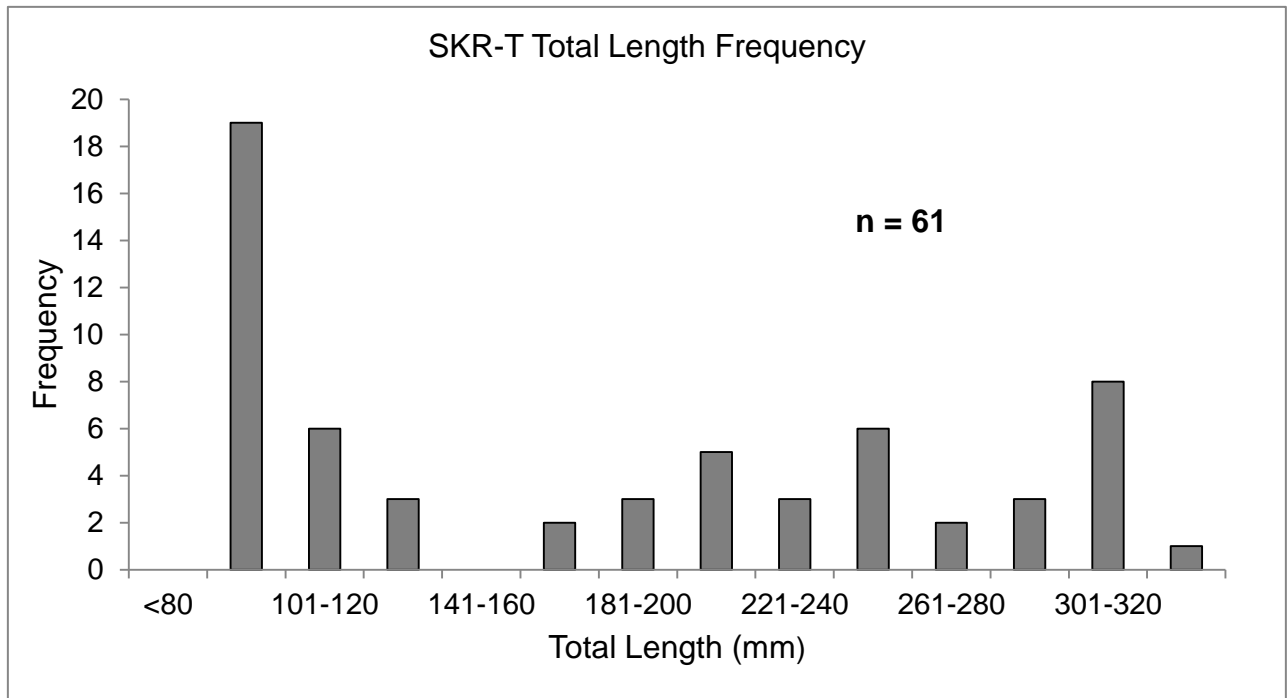


Figure 3. Total length-frequency histogram of the Tahoe sucker caught in Red Lake, July 2015

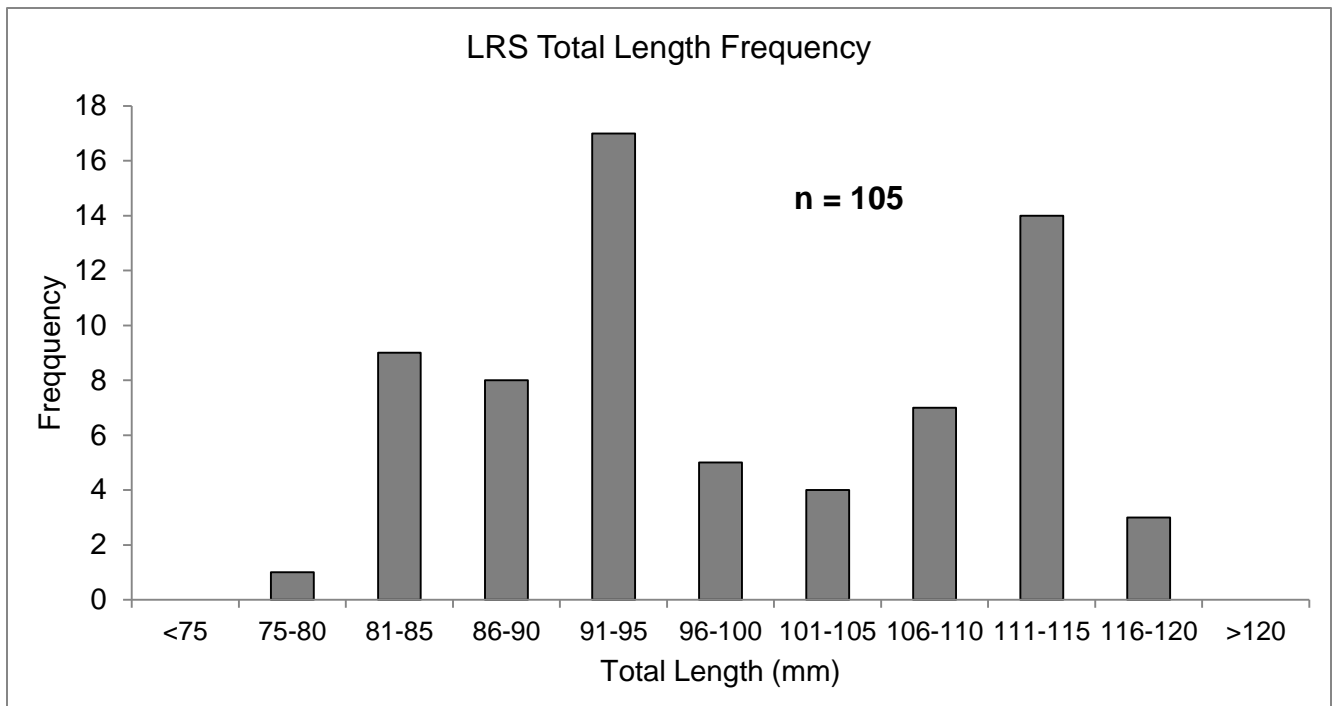


Figure 4. Total length-frequency histogram of Lahontan reddsides caught in Red Lake, July 2015

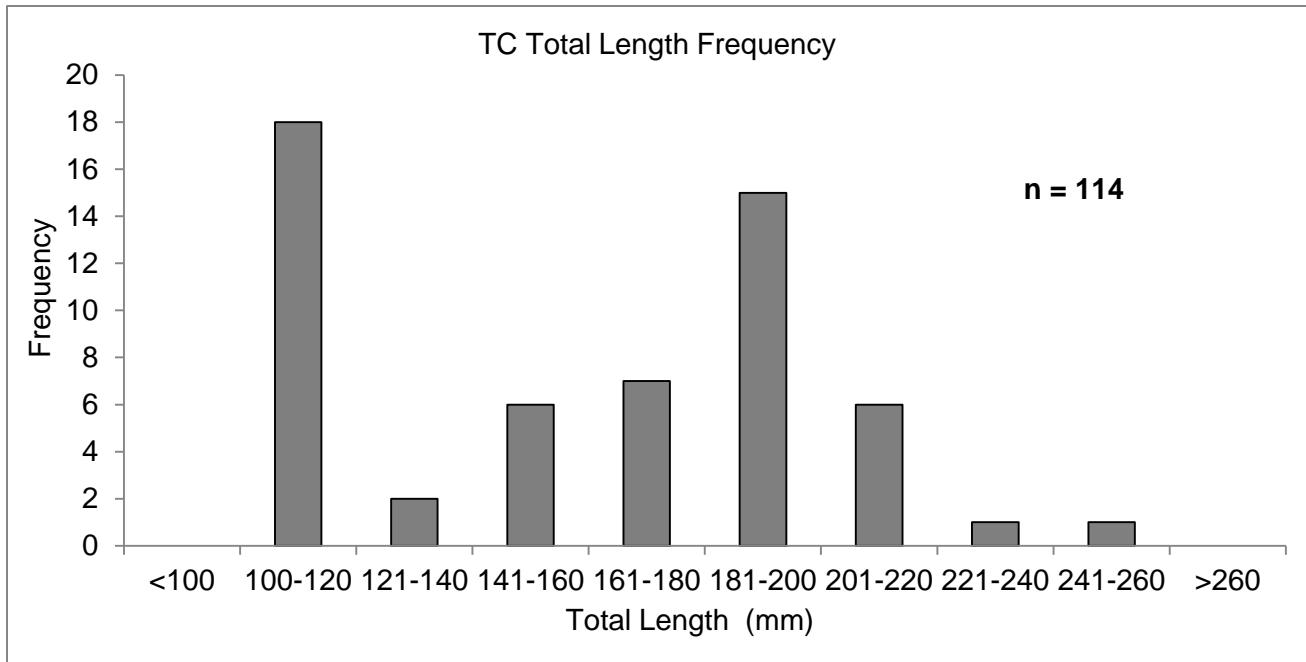


Figure 5. Total length-frequency histogram of tui chub caught in Red Lake, July 2015

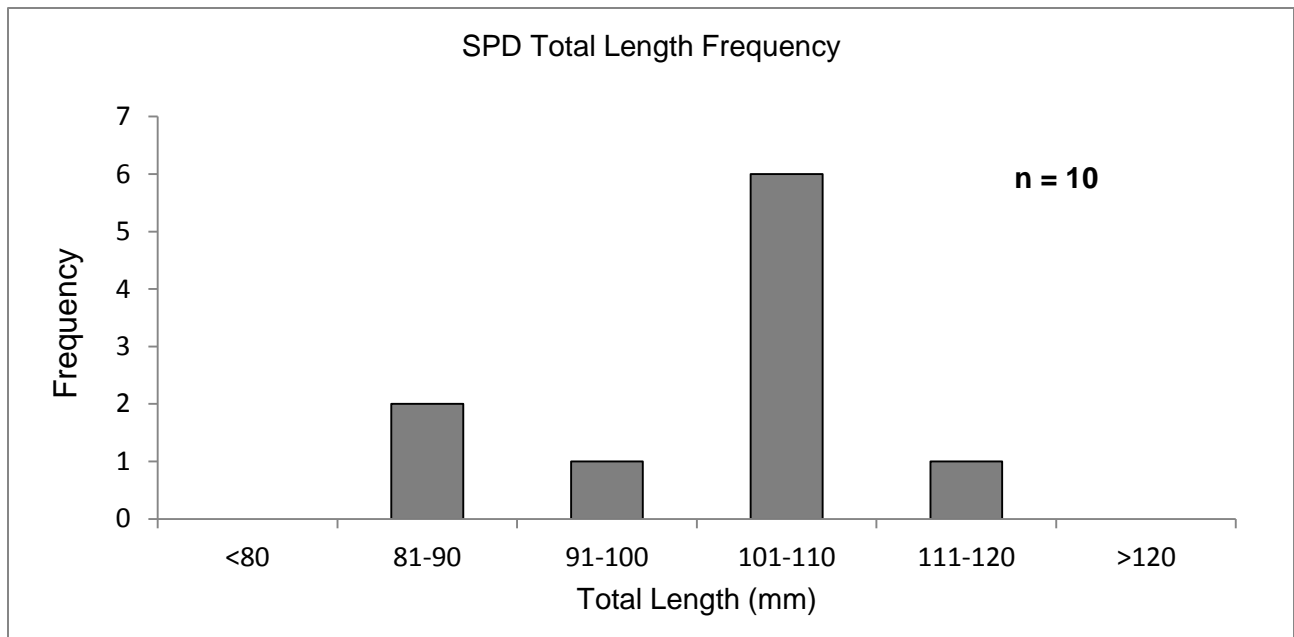


Figure 6. Total length-frequency histogram of speckled dace caught in Red Lake, July 2015