

State of California  
The Resources Agency  
Department of Fish and Wildlife

Fourth of July Lake Fish Survey  
Summer 2018

By

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North Central Region



Photo by B. Ewing (8/1/18)

## **Introduction**

In an effort to gather information on the fishery at Fourth of July Lake (Alpine County), a fish survey was conducted by California Department of Fish and Wildlife (Department) on July 31, 2018.

The objectives of this survey were to:

- Determine if Fourth of July Lake (Fourth of July) had a self-sustaining brook trout (*Salvelinus fontinalis*) (BK) fishery
- Determine the BK age class distribution
- Determine the growth rates of BK

This data along with future efforts and data collected from other lakes, will be used to monitor the status of this historically productive BK fishery.

## **Location and Description**

Fourth of July Lake is approximately a 15 surface acre lake in Alpine County, located at 38.649539 N, 120.017413 W, situated at 8,172 feet above mean sea level (Figure 1). The shoreline is a mix of rocks, sand, willows, and conifer forest. The composition of Fourth of July's substrate appeared to be mostly mud and various sized rock. Fourth of July receives water from numerous small inlets that originate from the steep terrain encompassing the majority of the lake's shoreline. At the time of the survey, Fourth of July was spilling. When Fourth of July spills, water drains into Summit City Creek, eventually contributing to the Mokelumne River watershed. Brook trout were stocked into Fourth of July by the Department from 1930-1964, rainbow trout (*Oncorhynchus mykiss*) were stocked from 1975–1979, and Lahontan cutthroat trout (*Oncorhynchus clarki henshawi*) were stocked once in 1932 (CDFW High Mountain Lakes Database).

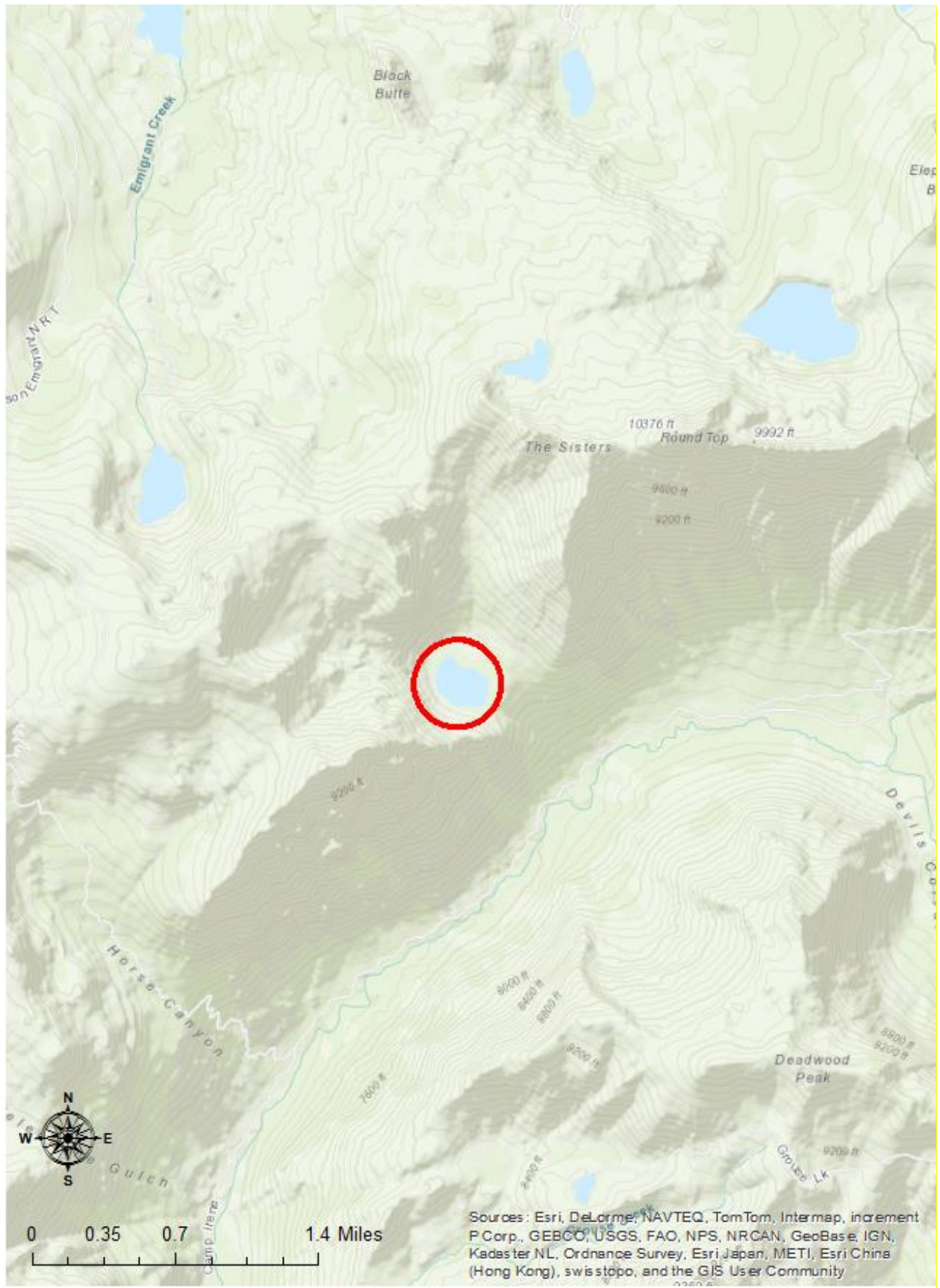


Figure 1. Fourth of July Lake, Alpine County.

## Methods and Materials

To collect information on the growth rates of BK age classes, the Department collected total lengths and scale samples from the lateral line area of BK. Collection of BK was accomplished by hook and line angling. Scale samples were placed in an envelope with the total length (inches), date, and sampling method recorded on the envelope. Any BK collected were marked with a fin clip in the upper caudal fin to distinguish newly captured BK from previously collected BK. The mean length and age ranges for any BK collected were recorded. Age was determined by counting scale annulus where each annuli were assumed one year of age (Casselman 1987).

## Results

Two BK were caught on July 31, 2018. The average total length was 5.75 inches. Total lengths ranged from (3.5 in. – 8.0 in.). The BK collected that was 8.0 in. was two years of age, while the 3.5 in. BK was one year of age. The age and total length relationships (Figure 2) of these two BK were consistent with Moyle (2002). With only two samples collected, representing two age classes, the relationship represented in Figure 2 regression line may not accurately describe the overall age/length regression of BK in Fourth of July.

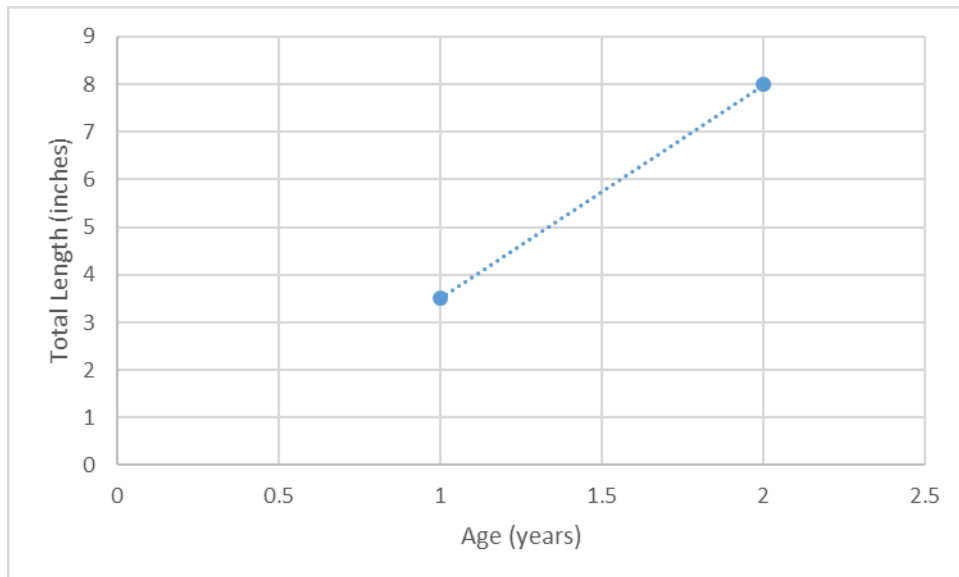


Figure 2. Brook trout age/length relationship from two brook trout collected at Fourth of July Lake on July 31, 2018.

## Conclusions

With only two samples collected and two different age classes represented, determining a BK's age from a given total length the regression may not be accurate. Collecting additional BK in the future would help refine the regression and may make a more accurate age/length relationship. Although the sample size was small, the two BK collected indicated that Fourth of July has a self-sustaining population of BK. Given its current status as a self-sustaining recreational fishery, the Department will not attempt to stock any trout into Fourth of July at this time.

## **References**

Casselman, J. M., 1987. Determination of Age and Growth. In: The Biology of Fish Growth. (Eds., Weatherly, A.H. and H.S. Gill). Academic Press London, pp: 209-242.

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Moyle, P.B. 2002. Sunfishes, Centrarchidae. Pages 376 – 408 in Inland Fishes of California. University of California Press, Berkeley and Los Angeles, California, USA.

