

Memorandum

Date: 11/10/2015

To: Kevin Thomas
Senior Environmental Scientist (Supervisor)
North Central Region

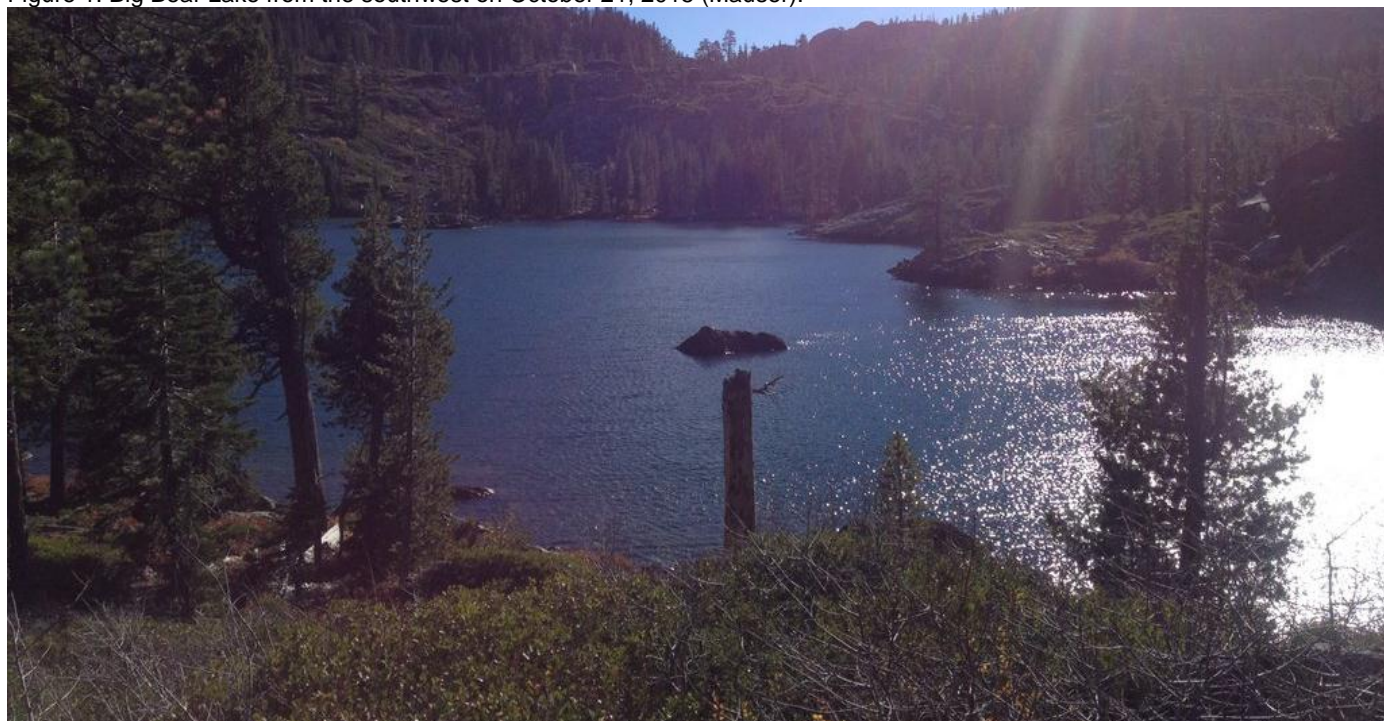
From: Sarah Mussulman
Environmental Scientist – High Mountain Lakes
North Central Region

Cc: Region 2 Fish Files

Subject: Fisheries Monitoring in Plumas County – Big Bear Lake (12247).

On July 21-22, 2013, California Department of Fish and Wildlife (CDFW) personnel conducted fisheries and amphibian monitoring surveys at Big Bear Lake (CA Lakes ID 12247) (Figure 1) in southern Plumas County. Two overnight gill nets were set for a combined total of 29.3 hours and returned four brook trout (*Salvelinus fontinalis*) and sixty-six speckled dace (*Rhinichthys osculus*). Due to the low numbers of brook trout captured and the proximity of the lake to a popular trailhead CDFW will resume fish plants at Big Bear Lake.

Figure 1: Big Bear Lake from the southwest on October 21, 2015 (Mauser).



INTRODUCTION

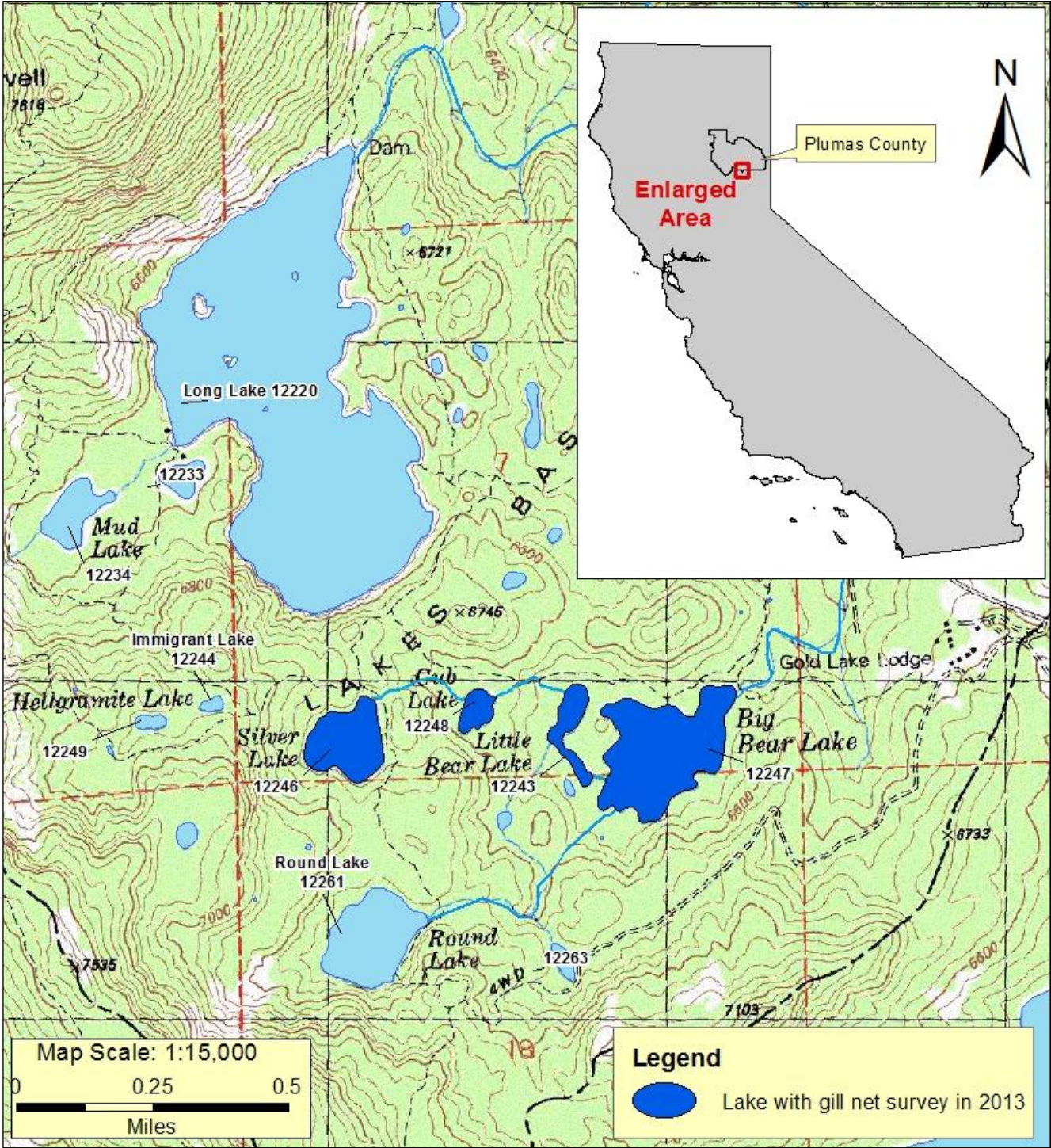
Big Bear Lake is one of five associated lakes formerly planted with fingerling trout by CDFW in the Lakes Basin watershed in southern Plumas County (Figure 2). Fish planting was halted in the area in 2000 and plants have not been resumed. The following lakes have not had a fish survey since fish plants were halted and the status of their fisheries was unknown: Little Bear Lake (CA Lakes ID 12243), Silver Lake (CA Lakes ID 12246) and Cub Lake (CA Lakes ID 12248). A fish survey was conducted at Big Bear Lake in 2012 and no fish were captured but due to the size of the lake and reports of trout in the upper watershed uncertainty remained about the status of the fishery at Big Bear Lake. Incidentally, nearby Long Lake (CA Lakes ID 12220) and Mud Lake (CA Lakes ID 12234) are both managed as wild trout fisheries and contain both brook trout and rainbow trout (*Oncorhynchus mykiss*).

As directed by the Hatchery Operations EIS/EIR (Jones and Stokes 2010) CDFW is currently evaluating the location and status of stocked and formerly stocked backcountry fisheries. All data gathered as part of this study is incorporated into the High Mountain Lakes database and made available to both federal and state agencies. Data from this memorandum will benefit the Department in future efforts for fish stocking and wild trout management in the North Central Region. Big Bear Lake is addressed in this memorandum.

ENVIRONMENTAL SETTING

Big Bear Lake has a surface area of 10 hectares and a maximum recorded depth of 15.2 meters. Littoral zone habitat consists primarily of silt with approximately 25% boulders and cobbles. Surveyors observed a flowing outlet stream consisting of a wide shallow channel though dense willows and two small inlet streams. Terrestrial habitat consists of mixed conifer forest and meadows at an elevation of approximately 1980 meters above mean sea level. Access to Big Bear Lake is via well-maintained trails and requires approximately a 0.25 mile flat hike from a trailhead. Incidentally, small groups of people occupied the majority of the shoreline at the lake during the July 22st, 2013 survey. The watershed drains into Gray Eagle Creek and eventually into the Middle Fork of the Feather River. Plumas National Forest manages the land in the watershed.

Figure 2: Location of the Lakes Basin area in southern Plumas County. Dark blue lakes had gill net surveys in 2013.



RESULTS

On July 21-22, 2013 two standard 36 meter long x 1.8 meter high 6 panel variable mesh gill nets were set in Big Bear Lake overnight for a combined total of 29.3 hours and four brook trout and 66 speckled dace were captured. Most recently, Big Bear Lake was planted with rainbow trout between 1956 and 2000. Occasional brook trout plants occurred from 1950 through 1992. A 2001 CDFW gill net survey captured one brook trout, three rainbow trout and speckled dace but it was unclear if the trout fishery would persist in the absence of fish plants. A single gill net set in 2012 returned no fish but due to the size and complexity of the lake as well as reports of trout in the upper watershed, the status of the fishery remained uncertain. Due to the low number of brook trout captured during the 2013 survey uncertainty remains about the quality of the fishery at Big Bear Lake, although CDFW believes brook trout will likely persist in the lake in low numbers. Due to the accessibility and popularity of the lake as well as low numbers of trout captured in the 2013 gill net surveys CDFW will resume fingerling rainbow trout plants at Big Bear Lake.

CDFW conducted amphibian monitoring surveys at Big Bear Lake on July 23, 2013 and observed no amphibians in the lake or its outlet.

LITERATURE CITED:

Jones & Stokes. 2010. Hatchery and Stocking Program Environmental Impact Report/Environmental Impact Statement. State clearinghouse #2008082025.