

# Memorandum

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Cc: Region 2 Fish Files

**Subject: Fish monitoring in Plumas County – Saddle (11986) and Grassy (12009) Lakes.**

On June 6, 2013, California Department of Fish and Wildlife (CDFW) personnel conducted fisheries monitoring surveys at Saddle Lake (Figure 1) and Grassy Lake (Figure 2) in Plumas County. Brook trout (*Salvelinus fontinalis*) were captured in Saddle Lake and large numbers of brown bullhead (*Ictalurus nebulosus*) were observed in Grassy Lake. A short section of stream flows from Saddle Lake to Grassy Lake and therefore brook trout are likely present in both lakes. Due to the persistence of brook trout in the watershed CDFW will not resume fish plants at Saddle or Grassy and will manage both lakes as self-sustaining brook trout fisheries.

Figure 1: Saddle Lake from the southwest on June 6, 2013 (CDFW).



Figure 2: Grassy Lake from the northwest on June 6, 2013 (CDFW).



## INTRODUCTION

The High Lakes are a group of lakes in western Plumas County on a bench above the North Fork Feather River (Figure 3). The lakes are located at approximately 6,000 feet elevation above mean sea level and can be accessed via a rugged OHV trail or steep hiking trails from the Feather River. 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: Saddle Lake (CA Lakes ID 11986), Campbell Lake (CA Lakes ID 11961), Long Lake (CA Lakes ID 11971), Morris Lake (CA Lakes ID 11914), Murphy Lake (CA Lakes ID 11980), and Chips Lake (CA Lakes ID 11919). 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. Fishery monitoring surveys were conducted at each lake in 2013 in order to determine fish population status and future management direction for each lake.

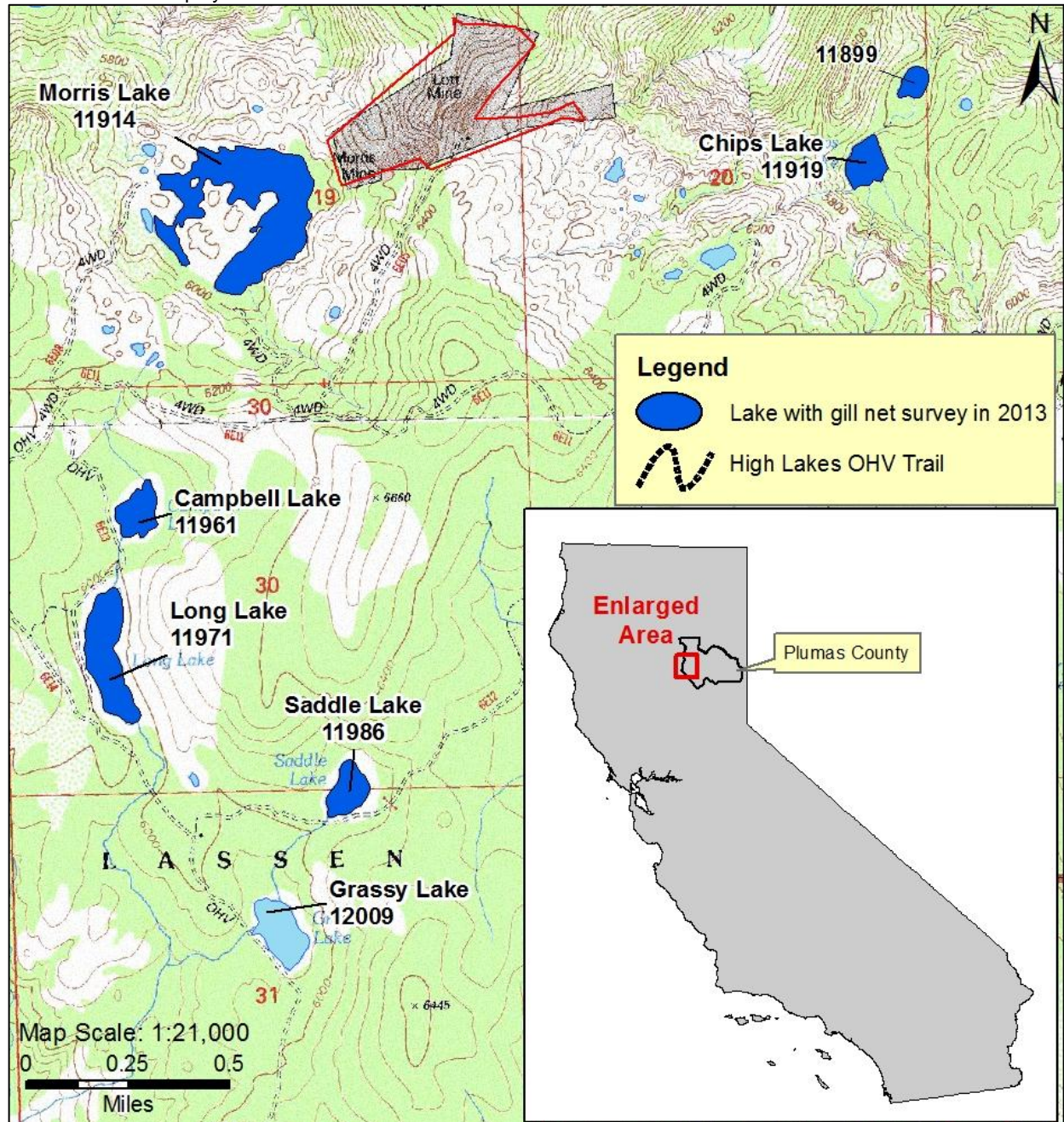
All data gathered as part of this study is incorporated into the High Mountain Lakes database and made available to both federal and state agencies. Data from this memorandum will benefit the Department in future efforts for fish stocking and wild trout management in the North Central Region. In order to fully assess the lakes for stocking potential, amphibian surveys were simultaneously conducted. Saddle Lake is discussed in this memorandum. Grassy Lake is included in the discussion due to its location just downstream of Saddle Lake.

## ENVIRONMENTAL SETTING

Saddle Lake (11986) is located in a small meadow at the end of the High Lakes OHV trail. A modified 4WD vehicle is necessary to drive to the lake which has a single small campsite on its eastern shore. The lake has a 2.44 hectare surface area and is 8.1 meters deep. It appears to be spring fed and a small outlet flows down to nearby Grassy Lake. Grassy Lake is located approximately 500 meters downstream of Saddle Lake and a fish passage barrier prevents fish from ascending back into Saddle. Grassy Lake has a 3.67 hectare surface area and a maximum recorded depth of 4.8 meters. Shoreline habitat at both lakes consists primarily of meadows and dense willows with small sections of mixed conifer forest, while littoral substrate is primarily silt with small sections of woody debris. Lassen National Forest manages the land.



Figure 3: Location of Long, Campbell, Saddle and Morris Lakes in Plumas County, Lassen National Forest. High Lakes OHV trail is also displayed.



## RESULTS AND DISCUSSION

On June 6, 2013 a standard 36 meter long x 1.8 meter high 6-panel variable mesh gill net was set in Saddle Lake for 7.3 hours and returned 6 brook trout. Most recently, Saddle Lake was planted with brown trout from 1986 through 2000. Brook trout plants occurred between 1950 and 1965 when plants were switched to rainbow trout (*Oncorhynchus mykiss*); rainbow trout were planted until 1973. A 2001 CDFW gill net survey returned 10 healthy brook trout and 7 large brown trout but it was unclear whether brown trout would remain in the fishery. 2013 survey data suggests that brown trout are no longer present in Saddle Lake.

CDFW conducted amphibian monitoring surveys at Saddle Lake on July 6, 2013 and observed approximately 3000 Western toad (*Anaxyrus boreas*) larvae, 4 garter snakes (*Thamnophis* spp.), 185 Pacific tree frog (*Pseudacris regilla*, *Hyla regilla*) larvae and 20 adult, 23 juvenile and 205 larval non-native American bullfrogs (*Lithobates catesbeiana*, *Rana catesbeiana*) within the lake.

A visual fish survey was conducted at Grassy Lake on June 6, 2013 and large numbers of brown bullhead and minnows were observed; dense lily pads throughout the lake made a gill net survey impractical. A gill net survey on August 30, 2001 returned brook trout, brown trout and brown bullhead. Most recently, Grassy Lake was planted with rainbow trout from 1971 to 1973; brown trout plants occurred in 1967 and 1967; and brook trout were planted once – in 1959. Given that a short section of stream connects Grassy Lake to Saddle Lake and brook trout remain in Saddle Lake it is very likely that brook trout are also present in Grassy Lake. However, Grassy Lake has the characteristics of a meadow pond with a deep silty shoreline and dense emergent vegetation including lily pads throughout the lake. Thus, although brook trout are likely present in Grassy Lake, its desirability as a fishery is dubious.

CDFW conducted amphibian monitoring surveys at Grassy Lake on July 6, 2013 and observed 40 adult, 290 juvenile and 8 larval non-native American bullfrogs and two garter snakes (*Thamnophis* spp.) within the lake.

Saddle Lake is challenging to access with a vehicle and has a persistent brook trout population. Nearby Grassy Lake likely contains brook trout as well and has the characteristics of a meadow pond. Therefore, fish plants will not be resumed at either lake and the area will be managed as a self-sustaining brook trout fishery.

#### LITERATURE CITED

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