State of California
Department of Fish and Game

M e m o r a n d u m

Date: 11/29/2010

To: Stafford Lehr
Senior Environmental Scientist
North Central Region, DFG

Joseph Johnson
Senior Environmental Scientist
North Central Region, DFG

Cc: File

From: Kevin Thomas
Environmental Scientist
North Central Region, DFG

Jay Rowan
Associate Biologist
North Central Region, DFG

Subject: Snorkel survey for South Fork American River above Folsom Lake, El Dorado County, CA

Introduction

On October 4 and 21, 2010 Department of Fish and Game (CDFG) personnel Jay Rowan, Kevin Thomas, John Hanson, Kenneth Kundargi, Mitch Lockhart, Mike Healey, and Joseph Johnson conducted snorkel surveys on the South Fork American River (SFAR) above Folsom Lake, El Dorado County, CA (Figure 1: South Fork American River Snorkel Survey Reaches). A total of 9.91 kilometers of river were surveyed on the SFAR. The visual encounter surveys were conducted using CDFG Wild Trout snorkel protocols. The snorkel survey conducted on October 4 consisted of seven observers and the survey on October 21 consisted of three observers. The snorkel surveys were conducted between the hours of 9:00 and 15:30. Transects were surveyed for the presence of aquatic species and additional data was collected on aquatic habitat characteristics. The primary focus of the snorkel surveys was to document the abundance and spawning capabilities of Chinook salmon in the SFAR.

In the late summer and fall of 2009 anglers began catching a significant number of 10 to12 inch Chinook salmon in Folsom Reservoir. The trend has continued in 2010 with many 10-20 inch fish being caught by anglers. This is a noteworthy occurrence because the last stocking of Chinook salmon to Folsom Reservoir was in 2006. Boat electrofishing surveys in 2009 and 2010 have captured gravid female Chinook salmon in both the SFAR and the North Fork American River (NFAR) where they enter Folsom Reservoir. It appears that Chinook Salmon have naturally reproduced in the SFAR, the NFAR, or both for at least two years in substantial enough numbers to sustain a marginal fishery.

Results

The survey reaches consisted primarily of low-gradient riffle pool complexes and long glides. Riffles ranged from 10 to 50 meters (m) in length and were dominated by a cobble and boulder substrate. Pools ranged from 5 to 25m in length and were dominated by a boulder and bedrock substrate. Pool depths ranged from < 1m in some areas to over 10m in other areas. There was a limited amount of salmonid spawning habitat present in both reaches however, gravel substrate was severely lacking throughout the majority of the reaches surveyed.

Fish species observed during the survey included Chinook salmon (*Oncorhynchus tshawytscha*), brown trout (*Salmo trutta*), rainbow trout (*Oncorhynchus mykiss*), black bass (*Micropterus* spp.), Sacramento sucker (*Catostomus occidantalis*), Sacramento pikeminnow (*Ptychocheilus grandis*), and sculpin spp (*Cottus* spp.). Trout, Sacramento pikeminnow, and Chinook salmon were frequently observed occurring in plunge pools associated with the riffle pool interface. Sacramento sucker were oriented towards the bottom substrate and occurred at varying depths of the pool and glide sections.

Chinook salmon were encountered in both survey reaches, with the majority being found in survey reach 1. A total of 91 Chinook salmon were encountered in survey reach 1 and 16 were encountered in survey reach 2 (Figure 1: SFAR Snorkel Survey Reach 1 Length Frequency Histogram and Figure 2: SFAR Snorkel Survey Reach 2 Length Frequency Histogram). One Chinook salmon redd was observed in survey reach 2 in a margin area of the river consisting of sands and gravels.

Several large (>18in) brown trout were found in survey reach 2. Large brown trout were absent from survey reach 1. It is unknown if these brown trout are adfluvial or resident in the SFAR. Rainbow trout abundance and size distribution in both survey reaches was consistent with similar river systems on the west slope of the Sierra Nevada (Figure 3: SFAR Salmonid Comparison between Reach 1 and Reach 2).

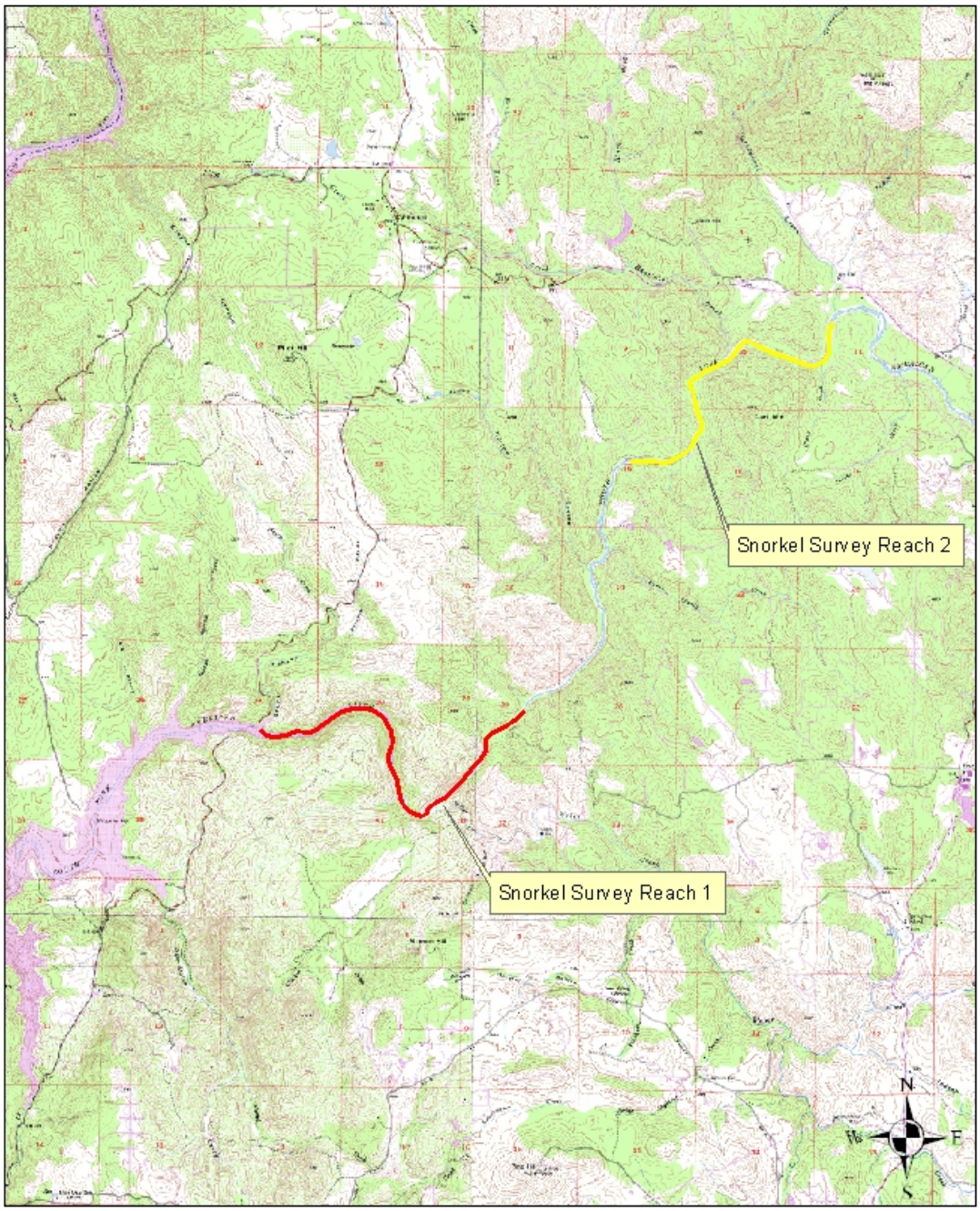

Figure 1: 2010 South Fork American River Snorkel Survey Reaches

Figure 1: SFAR Snorkel Survey Reach 1 Length Frequency Histogram

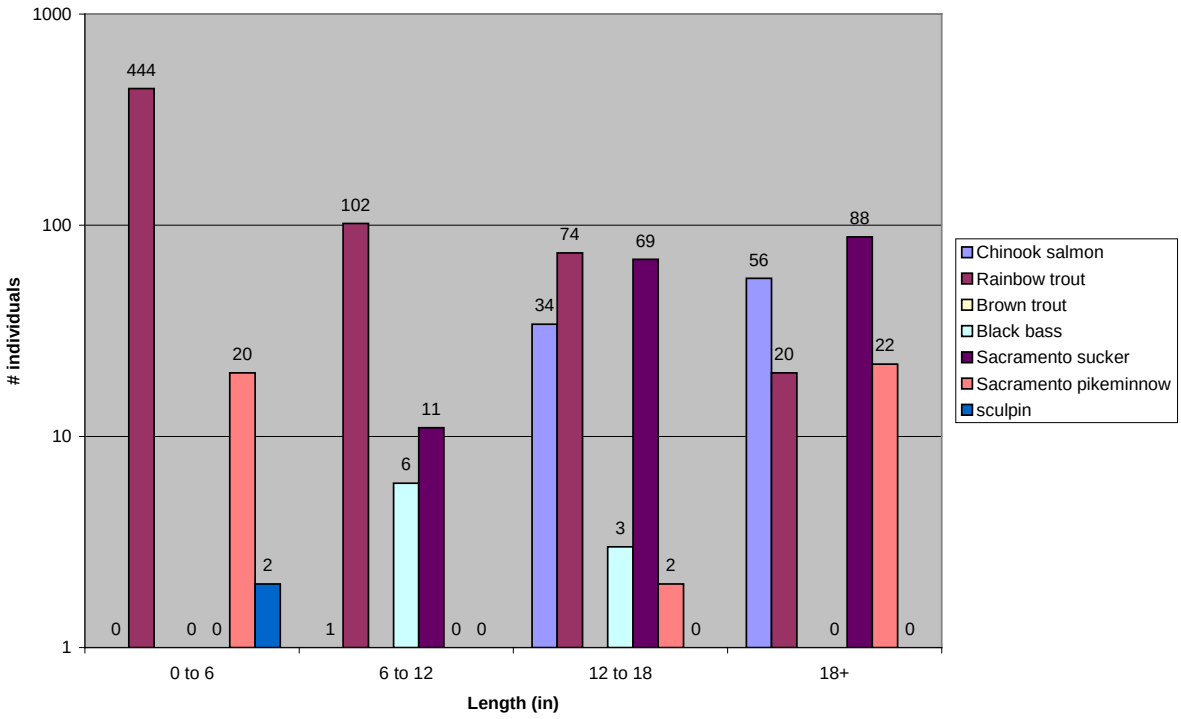

Figure 2: SFAR Snorkel Survey Reach 2 Length Frequency Histogram

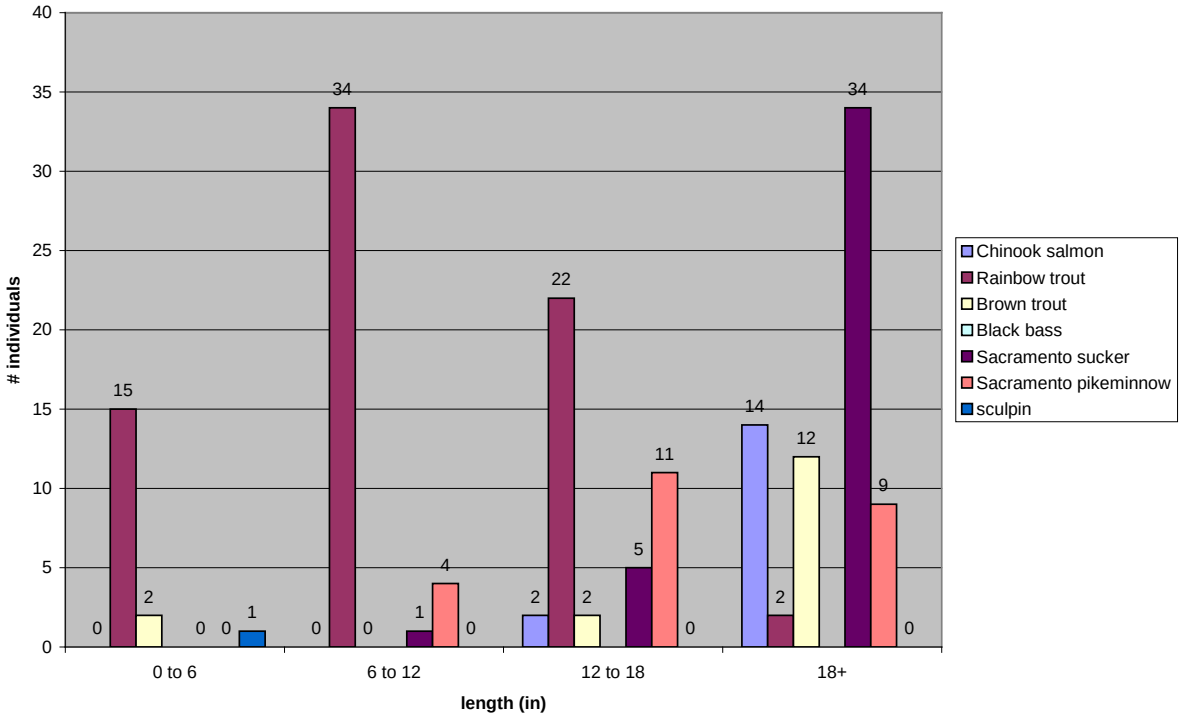

Figure 3: SFAR Salmonid Comparison between Reach 1 and Reach 2