Fact Sheet *December 2010*

2011 Georgiana Slough NonPhysical Barrier Pilot Study

Department of Water Resources

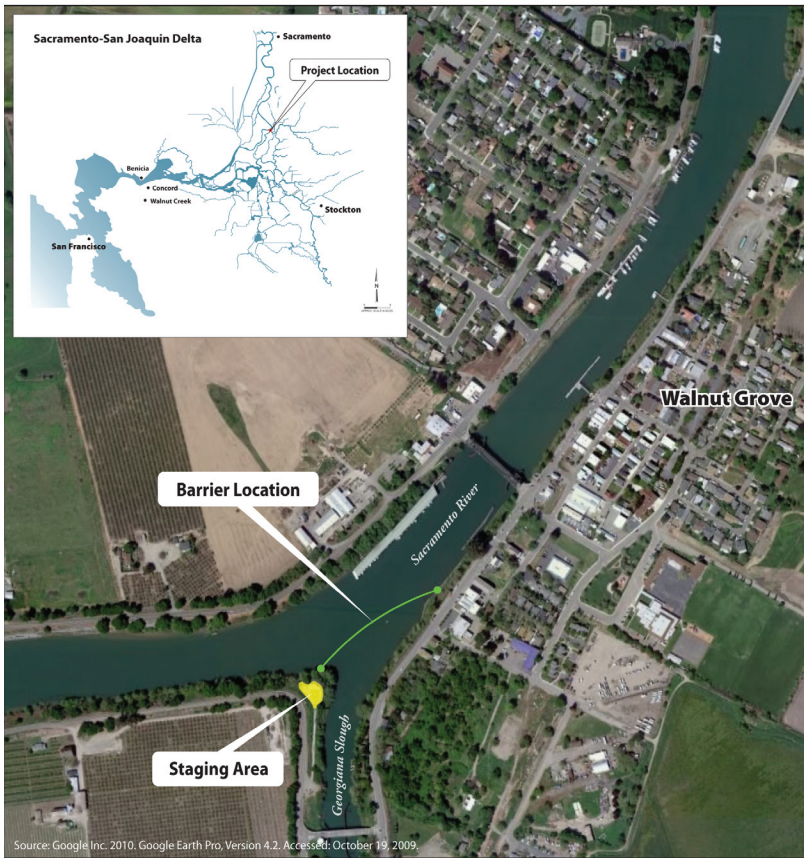
Background

The California Department of Water Resources (DWR) and the United States Bureau of Reclamation (USBR) are planning a pilot study to reduce diversion of juvenile salmon and steelhead to the interior Delta at Georgiana Slough. Research indicates that the path juvenile salmon take through the Delta on their way to the ocean affects their rates of survival. These studies show fish that migrate through Sacramento River, Sutter and Steamboat Sloughs have a better chance of surviving to the Bay than the fish entering the interior Delta through the Delta Cross Channel and Georgiana Slough.

In light of these findings, the National Marine Fisheries Service required DWR and USBR to consider engineering solutions to reduce diversion of juvenile salmon and steelhead to the interior Delta. DWR and USBR are developing a pilot study that will be implemented in February through May 2011 to test a fish barrier at the Georgiana Slough divergence from the Sacramento River near Walnut Grove. The proposed barrier is a Bio-Acoustic Fish Fence (BAFF), produced by Fish Guidance Systems. This is the same technology that has been applied for the past two years at the Head of Old River in the South Delta. The BAFF uses a combination of fish-deterring sound from underwater speakers, air bubbles, and light, to deter juvenile salmon and steelhead from entering Georgiana Slough, while allowing water to pass through the barrier.

Juvenile salmon will be tracked as they approach the barrier to evaluate its effectiveness in deterring the fish from entering Georgiana Slough. About 1,500 juvenile hatchery salmon will be implanted with an acoustic tag that will be detected by underwater hydrophones. The fish will be released upstream, and tracked as they interact with the barrier.

The goal of the pilot study is to test the effectiveness of the non-physical barrier in guiding fish down the Sacramento River, where their survival is known to be higher. Results from the 2011 study will be used to refine the BAFF and experimental design and operation for future studies assumed to take place in 2012 and beyond. This study is one component of a series of actions underway to increase California's salmon and steelhead populations.



Source: Google Inc. 2010. Google Earth Pro, Version 4.2. Accessed: October 19, 2009.

Study Schedule

Item	Date
Planning, Design & Permitting	Currently Underway
BAFF Installation	February 2011
Release and Track Fish	March - May 2011
Final Report	October 2011

Study Benefits

This study will test the effectiveness of a fish guidance system that has potential to significantly benefit California's salmon and steelhead populations. The use of a non-physical barrier aims to deter fish while allowing water to pass through into Georgiana Slough, satisfying important recreation and water quality goals.

Further Information

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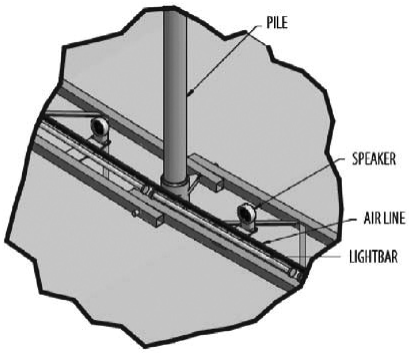

Figure 1: BAFF detail, showing underwater elements

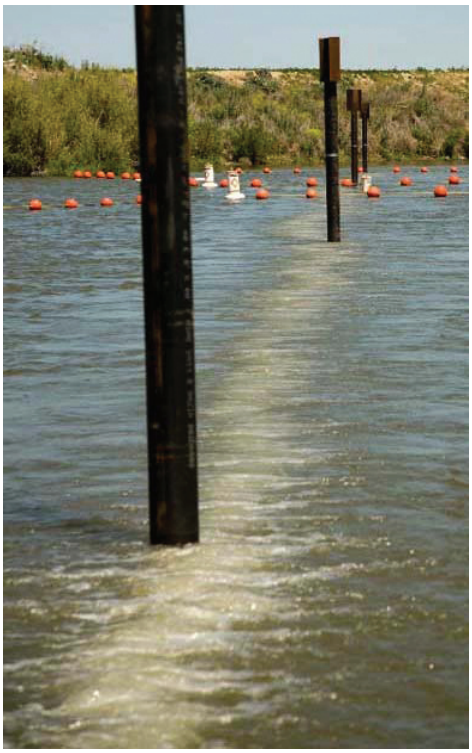

Figure 2: Photo of an operating BAFF at the Head of Old River