

## **Fish Salvage at the Hallwood-Cordua Fish Screen Scope of Work**

### **Background**

The lower Yuba River (downstream of Englebright Dam) supports fall-, late fall-, and spring-run chinook salmon and steelhead trout. Anadromous fish emigration patterns and environmental condition can directly or indirectly affect survival. Flow changes, flow magnitude, and water temperature are some conditions that may alter and affect emigration and survival. What is known about juvenile steelhead and salmon emigration to the river below Daguerre Point Dam has been obtained by the Department of Fish and Game through their operation of the fish screen on the Hallwood-Cordua diversion at Daguerre Point Dam. This diversion has a maximum diversion rate of 600 cfs and is screened only when the Department provides personnel to operate the screen. The screen is usually operated from March through June and in some years, the screen was not operated. The Department's primary objective was the operation and maintenance of the screen in order to salvage fish and there was limited opportunity to collect biological data. In 1999, the Department extended the salvage operation through August and collected data on fish size. For 2000, the Anadromous Fish Restoration Program has contracted with the Department to conduct extended sampling and salvage at the fish screens through August.

This study contributes to the goal of the *AFRP* by collecting the fish population and habitat data needed to facilitate management and restoration planning for high priority anadromous species in the Central Valley. Steelhead and spring-run chinook salmon are listed as threatened under the federal Endangered Species Act. This study will help provide justification for improving the screens at the Hallwood Cordua diversion and at the nearby South Yuba Brophy diversion. The run timing data will also help determine how to best manage the flows downstream of Daguerre Point Dam to protect steelhead and late fall-run, which outmigrate during the summer flow period. Monitoring will also provide salvage for all salmonids collected from the screens.

### **Description**

The primary objective is to identify the general attributes of juvenile steelhead and chinook salmon emigration in the lower Yuba River, including timing, relative abundance, fish condition, and length frequency, in order to help guide habitat restoration and management actions on the lower Yuba River.

Juvenile trapping will be conducted by the Department of Fish and Game over a 2-month period extending from July 1 through August 31, 2001. Salmonids will be identified to species and standard field protocols for length (measured to the nearest 0.5mm) and weight (weighed to the nearest 0.1g) measurements and conditions factors will be followed. Captured salmonids will be visually inspected for physical characteristics such as presence of yolk sac, degree of fading of parr marks and deciduous scales to determine life stage and/or degree of smolting. Additional efforts will be made to enumerate fish (based on size) that are significantly greater or less than the median length.

Operation of the fish screen requires Department of Fish and Game personnel camping on-site 24 hours a day and the ability to maintain personnel is contingent on environmental conditions. Under extreme weather conditions (air temperatures), it may not be possible to maintain personnel on-site and may require temporary shutdown of the project. All reasonable attempts will be made to maintain personnel on-site and operation of the project.

A draft report will be completed within 45 days of termination of juvenile salmonid trapping with a final report within 30 days of receipt of comments.

### **Schedule**

<b><u>Task</u></b>	<b><u>Start</u></b>	<b><u>End</u></b>
Task 1 Fish Trapping	07/01/99	08/31/99
Task 2 Draft Report	09/01/99	11/15/99
Task 3 Final Report	12/01/99	12/31/99

### **Budget**

Temporary Help (1210 hrs @ \$14.24/hr)	\$17,230
Travel	4,000
Miscellaneous	3,770
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Total	<b>\$25,000</b>