

To : Richard D. Beland

Date: July 24, 1984

From : Department of Fish and Game - Glenn/Colusa Fish Screen

Subject: Predator Removal to Enhance the Efficiency of the Glenn/Colusa Fish Screen

Lack of bypass flows have served to bring into question the efficiency of the Glenn/Colusa Fish Screen. It is assumed that the major factor contributing to low efficiencies is predation (Decoto 1974). Predator control utilizing nets or chemicals might alleviate the problem.

A 50 foot section of 4 inch stretched mesh gill net was fished in front of the fish screen on May 17,18, 1984. No fish were caught and the net was filled with debris. Because of the debris load and high velocities the net was not reinstalled. Netting the intake channel in general poses a problem because of debris, high velocities, irregular cross section and steep banks. Future netting plans might consider a heavier gauge gill net or seine.

Chemical treatment of the intake channel might provide temporary^{relief} of sufficient duration to benefit the April-June outmigrants. Since approximately 80% of the outmigrant salmon pass the screen from April-June a treatment affecting that period could be beneficial. Logistics regarding the mechanics of treatment might pose problems however. To provide benefits from April-June the treatment would have to be done during late March or early April. The 1972-83 average river flows during that period have been about 18,000 c.f.s. Intake channel flows are probably greater than 3,000 c.f.s until mid April. The District dam is not always installed and when it is, usually not until May or June. Thus the treatment would involve large flows, much of which could be returned to the river. Problems associated with chemical treatment thus include the following:

1. Large unregulated flows exist during the most beneficial Period.
2. There is the potential for significant amounts of chemical returning to the river.
3. The duration of predator control is unknown.

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