

To : Richard D. Beland

Date: July 17, 1984

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

Subject: Evaluation of Flow Adjustment Utilizing the Glenn/Colusa Canal as a Reservoir

Utilizing the upper reach of the Glenn/Colusa Canal as a storage reservoir has been suggested as a remedy for flow problems affecting the Glenn/Colusa Fish Screen. The reach from the District pumping plant (mile 1.34) to the Stoney Creek gates (mile 7.23) is approximately 6 miles long with an average width of 100 feet. The plan would call for the District to pump additional water during the daylight hours to be stored in the six mile reach. Decoto (1974) showed that approximately 80% of the outmigrant salmon moved between 2100 and 0700 hours. The water would then be released at night allowing reduced pumping and thus bypass water at the fish screen.

Conversations with the District personnel indicate that the District has considered the idea for their own purposes. They would, however, be opposed to daily releases because of the resultant fluctuations in the canal below Stoney Creek. Without daily bypasses at the fish screen there would be negligible benefit to the outmigrant salmon.

This alternative is also predicated upon the fact that sufficient water is available from the river at the pumping plant to allow the extra daytime storage. District records for 1984 show that they were almost continuously taking all the water available. This situation would generally exist during the outmigrant peak period of April through June.

An additional and indeterminate cost to modify the Stoney Creek gates must also be considered. To preclude extreme lower canal fluctuations the gates would have to be modified to automatically control flow based upon head differential.

Current problems associated with this alternative are then:

1. The District is opposed because of the uncontrollable canal fluctuations.
2. Adequate water is not currently available from the river.
3. Indeterminate costs would be necessary to modify the Stoney Creek gates.

It is possible, however, that this alternative might be further explored were the District to be challenged legally on their failure to provide adequate bypass water. Thus the District might consider that providing some releases at night might be preferable to having to provide a continuous bypass release.

Paul D. Ward
Fish and Wildlife Assistant II