

Comments on Potential 1999 EWA Operations for the Delta Smelt (From an operator's viewpoint)

It is a good idea to provide a review of the 1999 operations for the delta smelt and also an evaluation of how an EWA would have worked in 1999. I think that it would be worthwhile for the group to set aside some time and do a more thorough evaluation for the decision makers. The papers "EWA and Delta Smelt" and "Data on Delta Smelt Salvage at South Delta Pumping Plants in Spring and Early Summer" provided a lot of good data, but I would like to add a few thoughts.

The EWA may have been more limited to what it could have achieved than described in the above papers. A great part of the potential beneficial use of the EWA for the delta smelt would have been through any benefit provided by increasing Delta inflows, either north or south of the Delta. Note: Three of my five suggestions were for more inflow. A fourth suggested delaying VAMP startup because smelt did not show until second week in May in SWP salvage. April 20 mm Survey and Real-Time Monitoring also showed low densities of smelt. A fifth suggested not raising exports after the VAMP because surveys and salvage showed smelt abundance to be increasing. Operations of the EWA for export reductions may have been severely hampered by the lack of EWA storage south of the Delta prior to April (EWA water could have been purchased SOD and available on April 1. Also with a full San Luis on April 1, the EWA could have borrowed water to limit exports as we did in all games.) and the limited opportunities to move EWA water between April and the San Luis low point in August. (We often moved NOD water or increased exports with relaxed E/I in July and August to keep San Luis from drying up. Plus if EWA gets a cut of expanded Banks then it could be used to repay debt.) The EWA certainly has the potential to assist in the recovery of impacts before the summer of water year 2000 through the use of tools such as E/I relaxation, joint point, expanded banks, and water acquisitions. (Yes.) I think that this year would definitely fall under one of the tougher years for an EWA to operate. (Especially if EWA must be used to stop expanded Banks operations.)

The availability of EWA water south of the Delta would have been the greatest challenge this year. San Luis was full at the beginning of the pulse flow period in April. I do not know how much EWA water we could have had in other storage this year and withdrawal from ground water sources may not have been at an adequate rate to make up for almost 500 TAF of export impact before the low point. (Delaying VAMP would save a few hundred TAF give or take a few hundred TAF.) In June, export impacts were accumulating at a rate of about 5,000 cfs/day. Could we have anticipated this export impact soon enough to begin moving EWA water? (I have warned in the past about trying to makeup water after the VAMP - I didn't think it would be possible because of the smelt - and this year proved an example.)

- I do not believe that the delta smelt pattern was typical or predictable this year. The continuing large salvage of smelt at Skinner appeared to baffle many. The length of time that the smelt appeared to linger in the central and south Delta appeared to exceed expectations for this type of year classification.

(The data speak for themselves - see spreadsheet charts - in most years the median of total smelt salvage is after June 1 - furthermore the smelt after June 1 are worth more in terms of adult equivalents than earlier smaller salvaged smelt. 1980 was the historical year most similar to 1999 and it proved very similar, followed by 1993.)

- The San Joaquin River flows were higher than normal rather than "low" as noted in the EWA and Delta Smelt paper. The same applies to QWEST flows and Delta outflows with flows being higher than normal for this time of year. (Flows were not higher than normal, they were low-to-moderate as stated for a wet year at 3000-7000 cfs as in 1997, unlike the higher flows - up to 20,000 - in 1995 and 1998 and up to 12,000 in 1996 for the same period. They were higher than dry years like 1994 when flows were 1,000-3,000 cfs.)

- At the beginning of the VAMP, exports were in accordance with the delta smelt biological opinion, roughly 3,400 cfs. For the last 3 days of the VAMP, the exports were dropped to about 3,000 cfs.

- Additional EWA flows into the Delta may have moved the fish away from the zone of influence of the pumps, potentially reducing the salvage of delta smelt and the amount of time that export restrictions were needed. This makes a direct assessment of the volume of EWA water needed to offset export restrictions difficult. EWA can only do what seems reasonable - it can't be burdened with completely protecting ESA fish.

- Could VAMP have been delayed? Hindsight is nice, but the delta smelt salvage was beginning to increase in the first week of April. (Not true - no hindsight was needed - salvage did not increase until second week in May. The 20-mm survey indicated only a few larvae were widespread through the Bay-Delta in mid April.) (Although, additional inflow may have moved the fish in early April.) Delaying VAMP has logistics problems without significant lead time. Much coordination with the San Joaquin operators must be accomplished and DFG must prepare the fish for release for the planned VAMP date. This April was a perfect example of the potential to delay VAMP, especially after high winter flows, cold water, and smelt spawning in the Napa River, Suisun Bay, and Suisun Marsh. The VAMP provision allows for delaying if circumstances so dictate - so why not develop a process that allows a delay.

- With the severe restriction in export level moving into the peak irrigation season, San Luis Reservoir was experiencing a high rate of draw down. This caused concern over dam and embankment stability. Additional studies are being performed by Reclamation and DWR to determine a maximum desirable rate of water surface draw down. EWA water purchases SOD would lower the drawdown rate as would deliveries from groundwater.

- It appears that even with the current export reductions, we will get by the San Luis low point this year. This reinforces gaming scenarios in which San Luis EWA was negative in August, if the low point was not constraining. The best available forecast of the water demands is essential for this.

- Demand shifting must be looked at in the big picture. Shifting the demand of one user may

increase the demand of another user, resulting in no net overall benefit.

- Uncertainty over export level leads to difficulty in determining Delta inflow needs and reservoir release requirements. Also, constraints in power scheduling makes real time, day to day operation of the export facilities difficult. These contribute to impacts which have not been modeled.

- EWA purchases north of the Delta may help offset the impact in San Luis later in the year. Available export capacity may be very limited although relaxation of Banks export capacity (and sharing expanded capacity) would help out.

- Would an EWA operation have placed a limit on the amount of export restrictions which could have occurred in 1999, based on the EWA water available south of the Delta and low point projections? An EWA would certainly have been better than existing operations with ESA necessitated actions.