

Delta Smelt Working Group Meeting/Conference Call Minutes

August 21, 2006

Participating: Gonzalo Castillo (USFWS), Mike Chotkowski (USBR), Kevin Fleming (CDFG), Lenny Grimaldo (CDWR), Tracy Hinojosa (CDWR), Ann Lubas-Williams (USBR), Matt Nobriga (CDWR), Ryan Olah (USFWS), Tracy Pettit (USFWS), Jim White (CDFG) and Victoria Poage (USFWS, convener and scribe)

For Discussion:

1. Potential fall actions
2. Other actions
3. Fish Food Farm proposal

Recommendation for WOMT:

The Working Group agreed that the most defensible, critical period for using environmental water to protect delta smelt is the spring, when there is a clear link between flow, population distribution and entrainment risk. No data presently exists to demonstrate that the use of environmental water can influence the distribution of spawning adults, and the amounts of water needed to demonstrably improve fall habitat quantity/quality are unavailable. At times other than spring, it is likely that food limitation is a more critical problem than entrainment. The available data for striped bass and longfin smelt suggest that food limitation cannot be managed through the application of environmental water (attachment, Figure 1). Thus, it is very unlikely that small flow additions during fall could be reasonably expected to improve food availability for delta smelt. The Working Group therefore provisionally decided to recommend forestalling the use of EWA and other environmental water assets until the March-through-June period, when such use would have the greatest likelihood of a positive effect. The Working Group will, however, monitor Delta conditions and incidental take of adults, as per the 2005 OCAP B.O. and the Delta Smelt Risk Assessment Matrix. The DSWG may still recommend winter actions if adult delta smelt entrainment rises above the established threshold. The Working Group does not endorse the proposed fish food farm at Sherman Island.

Minutes:

Entrainment. At last Tuesday's WOMT meeting, Wim Kimmerer presented the results of an analysis of delta smelt entrainment that is part of an evaluation of the EWA that he is working on with co-authors. He estimates that at times, entrainment of delta smelt larvae may be as high as 30%, making it an important source of mortality. Larval losses due to entrainment may be over-ridden by food limitation during summer, but the Working Group is confident that it can minimize entrainment losses whereas mitigating for food limitation is more problematic and will require longer-term experiments and/or restoration programs.

Fall Flows. The Working Group discussed a proposal to maintain Delta outflow at a minimum of 7,000 cfs during September-December. Due to the wet spring, this action may be possible with little or no water cost. The Working Group is not opposed to this action, but did not recommend it because 7,000 cfs is not enough flow to detectably change physical habitat quantity/quality for delta smelt and will not likely change overbite clam distribution or abundance (attachment, Figure 2). Note that the quality of delta smelt fall habitat has recently been correlated with improved Summer Tow-Net Survey indices the following year (see notes from July 10, 2006). DWR generated new estimates on the water costs associated with proposed fall actions, based upon the most recent available forecast, as indicated below:

Net Outflow	October – December			
7,000 cfs	50% Hydrology	170 TAF	90% Hydrology	443 TAF
Net Outflow	September - December			
11,400 cfs	50% Hydrology	911 TAF	90% Hydrology	1,460 TAF

A net outflow of 11,400 cfs will maintain X2 at about Chipps Island if it is already at, or seaward of Chipps Island. Currently, X2 is near Collinsville about 10 km landward of Chipps Island. Fall physical habitat parameters do not respond linearly to changes in X2 position. Over the range of fall X2 positions observed since 1970, delta smelt habitat quality does not increase detectably until X2 passes seaward of Broad Slough (Figure 2 and Figure 3). The amount of environmental water required to move X2 seaward of Broad Slough to Chipps Island and keep it there throughout the fall is 3-4 times the annual EWA budget. Absent a formal and well-thought out experiment to develop an understanding of mechanisms underlying the fall habitat-summer abundance correlation, the DSWG cannot justify the water cost to maintain X2 at Chipps Island throughout the fall.

The Working Group believes that any fall flow control action should be set up as a full-fledged experiment to test competing hypotheses (i.e., reduction in clam distribution or abundance or reduction in entrainment susceptibility of adult delta smelt during winter or reduction in larval susceptibility to entrainment the following spring, etc.).

Old River/Middle River Flows. The Working Group recognized that Old River and Middle River flow targets could be achieved either by increasing San Joaquin River flow or by reducing exports, or more likely, through some combination of those actions. The Working Group believes that OR/MR flows that are neutral or positive through the spawning period of dry years are needed to minimize entrainment of larval delta smelt. These conditions are usually achieved for part of the spawning period through implementing the VAMP. However, the Working Group thinks that the VAMP starts too late in many years to be maximally protective. The target flows would depend to some extent on hydrology; if conditions in the spring are relatively wet, less flow could be needed, but in a 90% hydrology, OR/MR flows should be neutral or positive during a variable spring period based on water temperatures suitable for delta smelt spawning. In any hydrology, the Working Group would need to track fish distribution from survey data and determine the most appropriate flow targets as conditions develop. This year, San

Luis Reservoir may fill as early as December or January, which would potentially allow the Projects greater operational flexibility during spring 2007.

First Flush. Last winter, the Working Group looked at Delta conditions that could potentially influence the timing of adult delta smelt movement into areas wherein they would be subject to entrainment, and noted that in plots of the hydrograph against incidental take, it appeared that take increased in the days following the first major storms, as Sacramento River inflows increased. Definition of a “first flush” event may be based on precipitation or inflow; the Working Group will need to return to this concept in the next meeting.

Fish Food Farm. At last Tuesday’s WOMT meeting, Wim Kimmerer presented evidence that for several species the most important source of mortality in the Delta is food limitation. The Working Group was asked to review DWR’s proposal for an experimental food production facility on Sherman Island. The Working Group does not believe that the proposal should be implemented for several reasons. First, the proposed project is too small to make a detectable difference in estuarine food availability. Second, the project proposes to create a very shallow farm “habitat” for lower trophic level production during summer. This is likely to generate anoxic water similar to what often happens during fall in Suisun Marsh duck clubs. This poor-quality water would be discharged into a core delta smelt habitat area. Lastly, the project proposes to divert water onto Sherman Island from the surrounding waterways. Although the diverted water would be screened to exclude fish, larval fish may not be screened effectively. Furthermore, it cannot be screened to prevent nuisance organisms like Microcystis and overbite clam larvae that might have undesirable influences on what grows on the ‘farm.’

Action Items:

None

Next Scheduled Meeting: Conference call, Wednesday, August 30, 2006, 3:00 pm

Submitted,
VLP

Attachment 1.

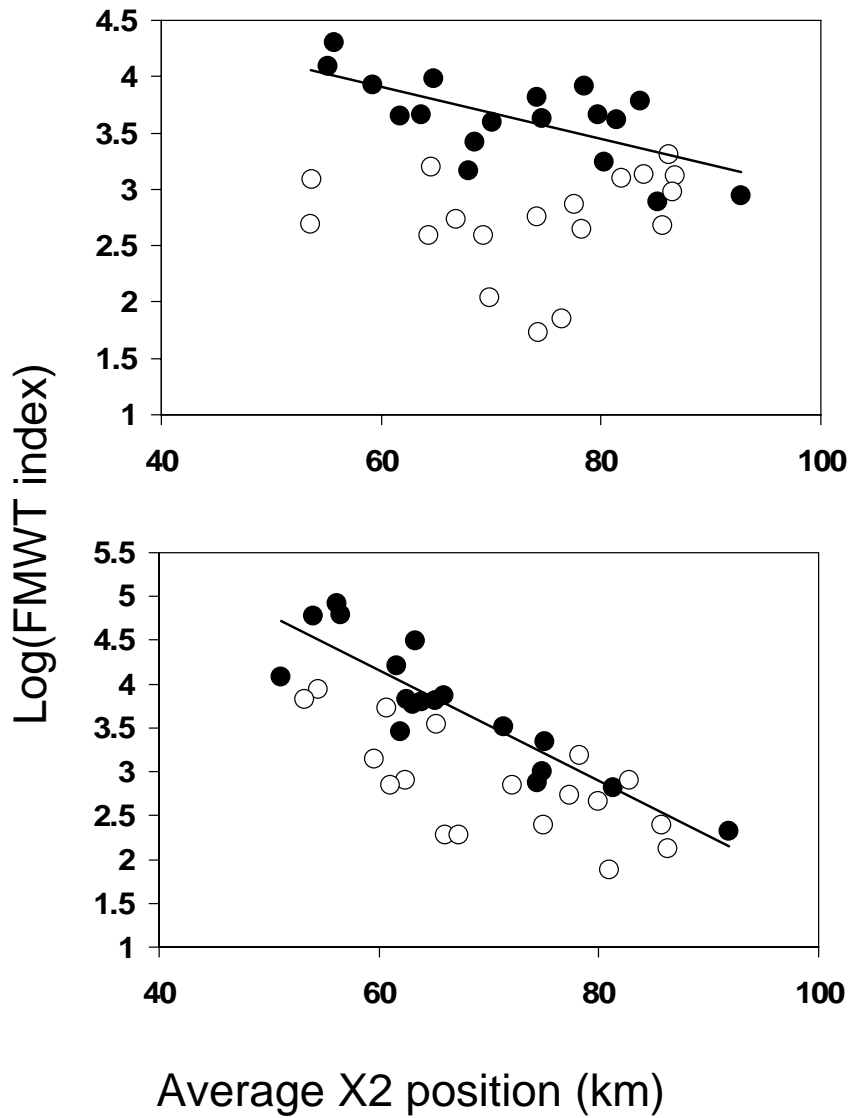


Figure 1. The 1967-2004 X2 relationships for striped bass (top panel) and longfin smelt (bottom panel) for before (solid symbols) and after (open symbols) the invasion of overbite clam, *Corbula amurensis*.

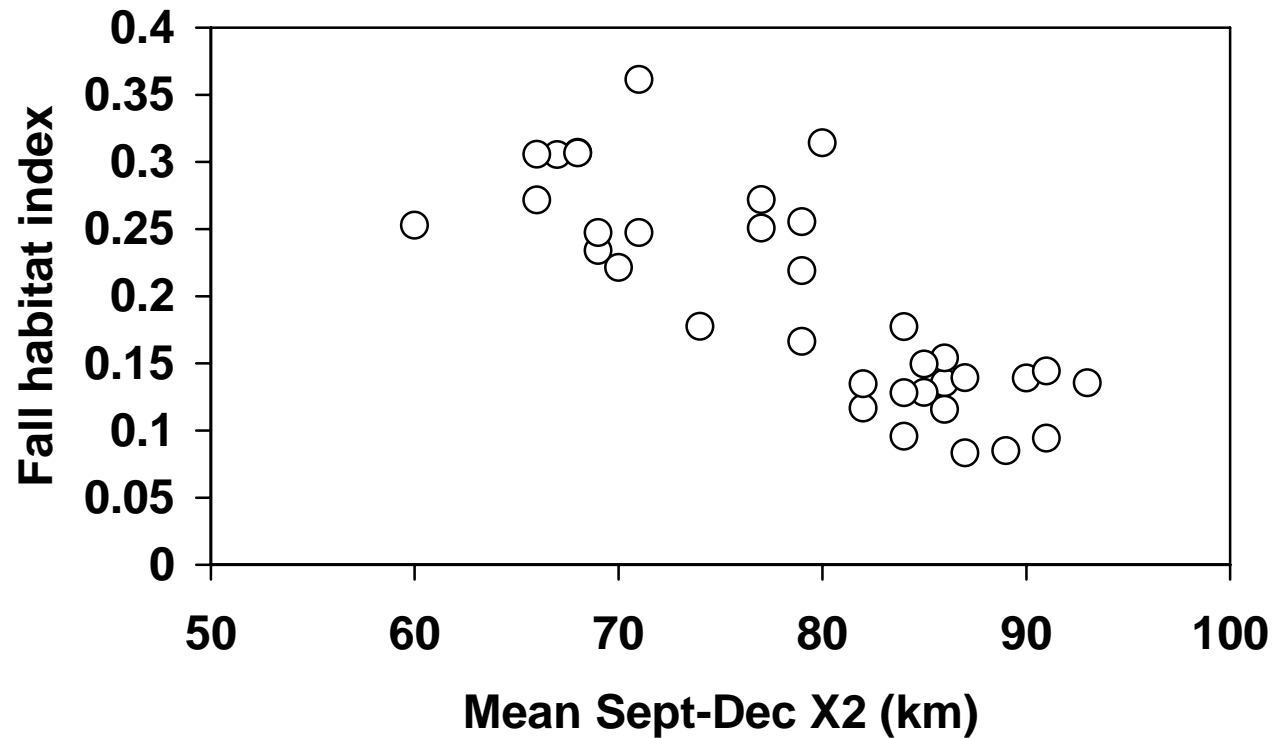


Figure 2. Relationship between fall X2 position and a delta smelt habitat index based on specific conductance, water clarity, and water temperature. Note that Chipps Island is approximately at X2 = 75 km and requires 11,400 cfs of Delta outflow to maintain its position there and higher flows to move it there from landward locations. Note that X2 was at approximately 85 km at the time of this meeting (August 2006).

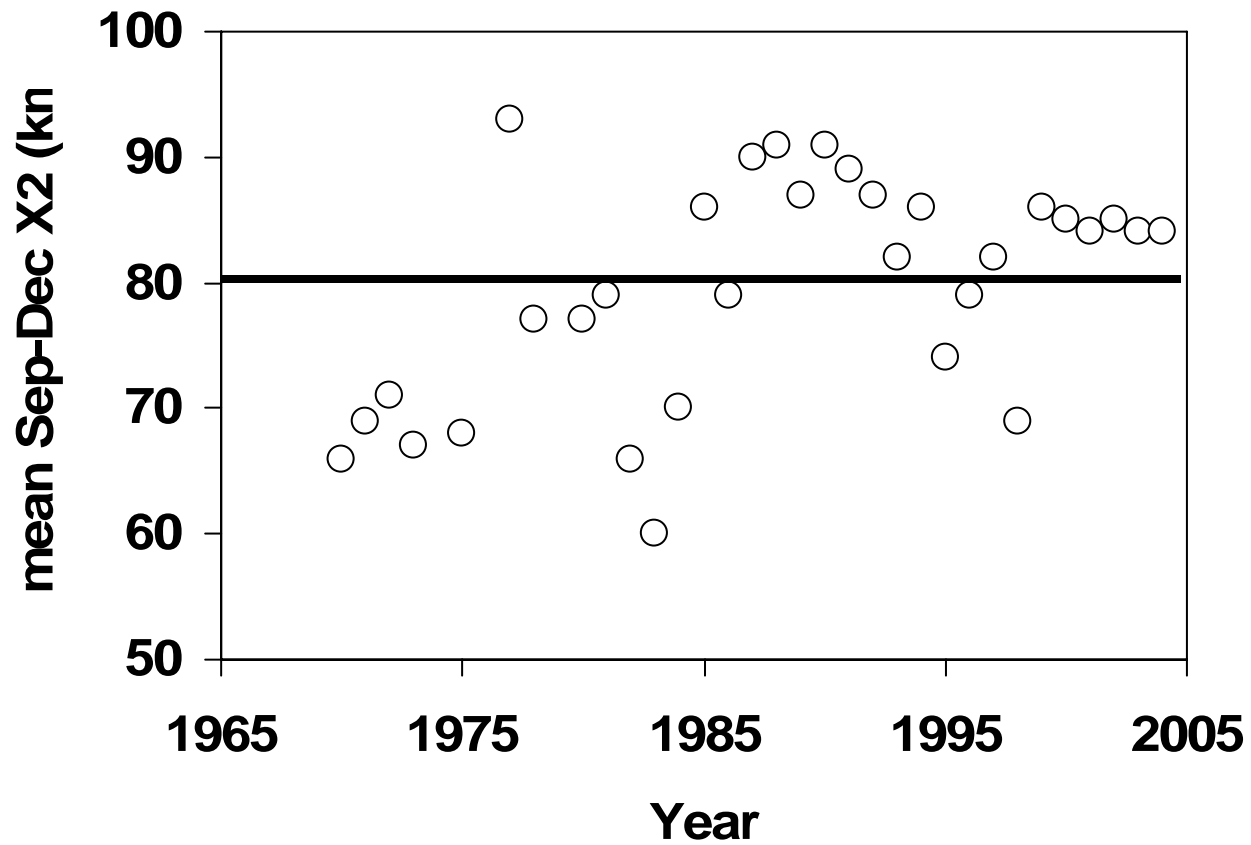


Figure 3. Time series of fall X2 positions for 1970-2004. The thick horizontal line denotes an X2 position near Broad Slough.