

## CHAPTER 7

# CONCLUSIONS AND RECOMMENDATIONS

**S**tart of the VAMP pulse flow period was again delayed from the default period to April 22 to May 22 to allow the test fish to increase in size. 2008 was the second consecutive year with a Critical year classification. Even though the projected Existing Flow was estimated to be slightly less than 2,000 cfs the SJRGA committed to providing the supplemental water necessary to support a VAMP target flow of 3,200 cfs. The final average Vernalis pulse flow over the 31-day period was 3,163 cfs, varying between 2,640 cfs and 3,480 cfs. Combined exports averaged 1,520 cfs. Flow monitoring was conducted by DWR using Acoustic Doppler Current Meters in the San Joaquin River upstream and downstream of the Old River and downstream of the HOR and in the Old River. The results for survival component and predator monitoring of the VAMP study in 2008 have been delayed as the USGS continues to analyze the data that was collected. Unfortunately the 2008 results will be hampered by a lower than acceptable acoustic tag reliability caused by premature battery failure.



Planning for the 2008 study was initiated by the SJRA Technical Committee in August of 2007. The acoustic telemetry study implemented in 2008 involved the efforts of the USFWS, USGS, DFG and SJRGA consultants. Studies complimentary to VAMP were conducted by various consultants and agencies. In particular, the studies by the University of the Pacific and Natural Resource Scientists, Inc. evaluated water quality conditions and predation, respectively.

Conclusions and recommendations have been developed, and summarized in Table 7-1. The conclusions and recommendations include both technical and policy/management issues that will affect the implementation of future VAMP operations and investigations.



**Table 7-1**  
**Summary of VAMP 2008 conclusions and recommendations**

CONCLUSIONS	RECOMMENDATIONS FOR 2009
The flow data collected in 2008 at the San Joaquin River near Lathrop, Old River at Head and San Joaquin River near Mossdale Bridge ADCMs provided useful information on the flow split at the Head of Old River	The 2005 through 2008 flow data should be compared against DWR-DSM2 modeling results. Continue to measure the stage and flow monitoring at these locations.
Premature failure (battery failure) of the acoustic tags negated the ability to accurately predict smolt survival.	Increase manufacturer quality control and provide additional field verification of tag reliability. Continue tag life study in 2009.
Access to the fish release sites at Durham Ferry was limited and difficult, requiring added fish handling	Relocate the Durham Ferry release site to provide improved access.
There were difficulties in tempering the fish at Durham Ferry.	Improve processes for transporting, tempering and releasing test fish.
Short-term survival (48-hours post-transport) was high (94%) indicating that handling, transport, and release likely had minimal effect on short-term smolt survival.	Continue net pen studies and fish health inspections.
The timing of VAMP has been designed to adaptively change within a few weeks.	Continue to identify opportunities when it would be beneficial to delay the VAMP period to stabilize VAMP test conditions and to increase protection for juvenile Chinook salmon outmigrating from the San Joaquin basin.
Further evaluation of survival rate versus export rate is needed. The VAMP is limited by data at the target conditions of 7000 cfs flow with a HORB with exports at 1500 or 3000 cfs.	Evaluate the possibility of amending the San Joaquin River Agreement to achieve needed test conditions of 7000 cfs flow with a HORB at exports of 1500 or 3000 cfs. Prescribing target conditions will allow the most critical data to be obtained quickly so that the role of exports can be identified in the most efficient manner.
The Acoustic Telemetry study conducted in 2008 was challenging and had less than satisfactory tag reliability.	Continue to coordinate among agencies and plan early. Repeat tag life study in 2009.