

Response to Bay Institute July 7 Memo on EWA  
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July 20, 2000

1. Much of the paper is not a criticism of the EWA, but rather a criticism of the balance between water exports allowed by CALFED and the assets given to the EWA. This distinction is critical. The EWA is just a tool and it will succeed or fail based upon the level of assets it is allocated.
2. Impacts on Endangered Species. (pages 2-3). The data presented do not support the assertion made. First of all, any comparison with 1982 is unfair. In 1982, San Luis was drained for repairs, so historical exports were at abnormally low levels. Another of the years that always shows increases is 1983. I suspect that the problem with this year is that the models may be assuming greater demand in this year than actually would exist. Therefore, modeled pumping may be too high. However, we will leave this year in for purposes of comparison. With 1982 excluded, we see that, comparing Game 6A to historical take levels:
  - Delta Smelt. Take was increased in 5/13 years. Only 1983 and 1994 represented significant increases over the historical baseline. Average percentage increased take for the 5 years of increases was 28%. Average declines for the 8 years of decreases was 53.5%. These data do not support the argument that the EWA failed to protect Delta smelt.
  - Chinook Salmon. There was a significant increase in take in just 2 years out of 13 (1993 and 1994). The increase of 1% in 1986 is surely a statistical dead heat. In the two years of increase, the average increase was 14%. In the 10 years of decreased take, the decrease averaged 53.6%. Again, how is this evidence that the EWA failed to meet the historical marker?
  - Splittail. There is a typo in 1986. Take in Game 6A actually decreased this year compared to historical conditions. The paper shows an increase. With this correction, we see a significant increase in take in just 3 years out of 13. One of those years (1994) had a 101% increase, but from a baseline of just 2,416 fish. Pulling out 1981 and 1984, which had statistical dead heats, we have that the average increase in take during the 3 years of increases is about 59%. The average decline in take during the 8 years of decline is about 37 %. Given that about 2,000 fish generated the high value for increases during 1994, the averages are probably comparable. Clearly the 6A pattern is preferable to the historical pattern.
3. Page 4, paragraph 1. It is incorrect to say that EWA debt was based upon Tier 3 water assets.
4. Page 4, last paragraph. It is possible that modeled demand was too high during 1983, 1986 and 1993. If so, this merely strengthens the case that the EWA will provide strong protection. The larger issue is whether the EWA is required to provide benefits compared to historical each and every year to be considered a success. This is a scientific question. I would assume that an occasional bad year is acceptable provided that the preponderance of years represent an improvement.

5. Page 5, first paragraph. It is not true that EWA cuts were unimportant during dry years. They were simply cheaper. A look at the record shows that the EWA took significant actions during all years.
6. Page 5, third paragraph. The suggestion is made that the EWA should vary with this size of Project operations – perhaps 8-10% of forecasted exports. The truth is that the EWA already routinely meets this criterion as is shown by the chart below for Game 6A. The chart also shows how b2 and the EWA work together to provide protection. In years when b2 provides major protection against exports, the EWA has less to do and its protection values drop. When b2 provides minimal export protection, EWA steps up its efforts to fill in the gap.

Year	Exports	EWA Cuts	B2 Discretionary Cuts	EWA Cuts/ Total Exports	B2 Cuts/ Total Exports	Total Cuts/ Total Exports
81	5480	464	57	8	1	10
82	6418	925	373	14	6	20
83	5942	136	737	2	12	15
84	4466	499	208	11	5	16
85	5595	560	0	10	0	10
86	6026	742	270	12	4	17
87	4841	126	354	3	7	10
88	2860	465	46	16	2	18
89	4901	365	21	7	0	8
90	3908	166	358	4	9	13
91	2500	418	0	17	0	17
92	3071	134	294	4	10	14
93	5658	687	541	12	10	22
94	5388	471	-150	9	-3	6
Average % reduction:				9	5	14
Standard Deviation				5	5	5

7. Ecosystem Restoration Actions – beyond reducing salvage. Page 5

This is primarily an argument about whether increased demand for water in the export area should be reflected in export increases above historical levels during wet years. That is, the Bay Institute takes issue with the level of exports allowed by the Delta Accord (endorsed by the Bay Institute in 1994). It has very little to do with the EWA per se. In fact, EWA and b2 actions almost invariably increased Delta outflow during the Game 6A compared to outflow without b2 and the EWA. By definition, the EWA cannot reduce total Delta outflow on an average basis, since it does not increase total exports.

In the first paragraph, I disagree with the analysis of AFRP water. It is not true that most AFRP water is captured in the export pumps and it is not true that when AFRP water is exported for the EWA that the water does not help Delta and Bay habitats. The chart below shows total AFRP releases during Game 6A, the amount of AFRP water exported,

and the EWA share of AFRP water Exported. All units in KAF unless otherwise specified.

Year	AFRP Oct - Jan	AFRP Feb - Sep	Total AFRP	Total State Gain	EWA Share of State Gain	% of AFRP Exported
81	420	90	510	316	158	62
82	322	0	322	118	59	37
83	0	0	0	0	0	0
84	0	306	306	0	0	0
85	225	451	676	218	109	32
86	194	0	194	118	59	61
87	256	100	356	204	102	57
88	3	301	304	0	0	0
89	81	332	413	94	47	23
90	248	273	521	174	87	33
91	65	185	250	50	25	20
92	140	231	371	66	33	18
93	88	90	178	0	0	0
94	450	261	711	274	137	39

Thus, in general a large percent of AFRP releases become outflow. Moreover, the EWA share of State Gain is used in generating future export cuts. Such export cuts will generally increase Delta outflow, thereby improving habitat conditions.

8. Page 6 “ The EWA modeling exercises are useful but may be inaccurate”. The statement that the EWA reduces winter and spring Delta outflow is not supported by the evidence presented in the graph. As can be seen, Game 6A generated outflows above the base in February, March, April, May, and June. This is a typical pattern. The EWA makes major export cuts during these months. Some of the cuts are backed up into upstream storage, but a large percentage of the cuts go to increase outflow.
9. Page 7. Valid point that changes in hydrology have not been incorporated into salvage numbers. However, given that the EWA generally improves hydrological conditions, such inclusion would be more likely to reduce salvage than increase it. In particular, the biological template, upon which the Game 6A actions did take such considerations into account. In some months, no actions were taken in the game on the assumption that fish populations would no longer be near the pumps. However, the template assumptions about shifts in density were not reflected in salvage calculations. If salvage numbers had been adjusted, then EWA performance would have been even higher than indicated by the current outputs.

The basic point brought up by the paper, that EWA performance becomes mitigation as total exports increase over historical levels is valid. The solution to this is to provide feedbacks between increased deliveries and the EWA. For example, the EWA could receive a share of all future improvements in infrastructure. However, it is not true to suggest that the current EWA is simply mitigation. In fact, the EWA will improve fish

conditions, not merely compared to the WQCP, but compared to historical conditions during the 1980s.