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Testimony by Dan B. Odenweller
on behalf of the
California Sportfishing Protection Alliance
in the matter of the
Yuba County Water Agency Petition
Regarding the Flow Schedules in RD1644
before the SWRCB

My name is Dan B. Odenweller, and I reside at:

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Education: B.S. Zoology, C.S.U. @ Long Beach, 1969
M.A. Biology, C.S.U. @ Long Beach, 1971, Thesis titled: Life History of the Shiner Perch, Cymatogaster aggregata Gibbons, in Anaheim Bay, California

Employment: California Department of Fish and Game, 1968 to 2001, relevant experience included:

1974 to 1991 - Research Supervisor, Fish Facilities Program, Bay-Delta Project, Stockton, California.

- Supervised the Fish Facilities Unit and the Fish Salvage Operations Unit of the Bay-Delta Project
- Supervised the Delta Environmental Review Team and the Suisun Marsh Team of the Bay-Delta Project
- Chair of the I.E.P. Fish Facilities Technical Team
- Program Manager, Upper Sacramento River Instream Flow Study
- Supervised the Contract Services Section of the Bay-Delta Project in Red Bluff

1991 to 2001 - Statewide Water Diversion and Fish Passage Coordinator, Inland Fisheries Division, Sacramento, California

2001 to 2004 - N.O.A.A. Fisheries, National Marine Fisheries Service, Southwest Region, Bioengineering Team, Sacramento, California

Testified as an expert witness in both previous SWRCB rounds of hearings (1992 and 2000) leading to RD1644, on behalf of the California Department of Fish and Game.

There are two areas of concern which, I wish to discuss in more detail. First is the issue of unscreened (and poorly screened) diversions on the Yuba River, the Feather River, the Sacramento River, and in the Delta. The second is the effect of the water transfers on the Federal and State fish facilities in the south Delta.

1. Unscreened diversions (and poorly screened diversions) were the subject of my earlier testimony in the two previous hearings leading to RD1644. I testified to the effects of these diversions on the fish and wildlife resources of the Yuba River, and on the means to resolve the issue.

    - The CDFG Fish Screening Criteria and the NOAA Fisheries' Fish Screening Criteria for Anadromous Salmonids constitute the best available science for determining the protective value of fish screening structures. These criteria were developed through many years of studies and analysis of the biological, physiological, and hydrological aspects of fish screening technology. Full conformance to these criteria is the only way to insure the level of protection that must be afforded to a species that is listed under the Endangered Species Act, or the California Endangered Species Act.

    - Sufficient data has been collected throughout several studies of the South Yuba-Brophy facility to determine conclusively that this structure does not meet several of the necessary criteria set forth in the CDFG Fish Screening Policy, or the NOAA Fisheries' Fish Screening Criteria for Anadromous Salmonids. This point was clearly established during the 2000 hearings, (Transcript of April 3, 2000 hearing pages 1971 to end).

    - There are no known similar structures (rock weirs) in use today that have been found to provide acceptable protection for listed salmonids and/or fully comply with the CDFG Fish Screening Policy, or the NOAA Fisheries' Fish Screening Criteria for Anadromous Salmonids.

    - As the California Department of Fish and Game's fish screening expert during the previous rounds of hearings, I determined that it was not possible to "fix" or alter the present structure in a way that could make it meet all the necessary fish screening criteria. NOAA Fisheries (NMFS) staff has recently confirmed this assessment.

- The proposed action will shift flow from the spring when it is facilitating the outmigration of Salmonids from the Yuba River, to the fall, when the water has a greater value for transfer to storage south of the Delta.

2. Essential to the understanding of the full range of impacts associated with this proposal is the effect of the transfer pumping on the South Delta pumping, at the CVP and SWP facilities. The key is understanding that there is a limited period of opportunity in which to pump these water transfer exports, and the CVP and SWP contracted water deliveries.

   Pumping cannot begin to increase in the late fall until there is water available in the Delta. This water can be from releases from storage, for example, planned releases from storage to establish the flood control reservation, or the water can come from uncontrolled storm runoff. The priority for the project operators is to fill their south of the Delta storage capacity before other factors limit their operations. Prominent among these other factors is the winter run Chinook salmon Biological Opinion, and its "Incidental Take" limit.

   Pumping the water transfer exports, takes up some of the available capacity, and regardless of when this water is pumped, the net effect is to either raise the export level (pumping rate), or extend the period of pumping for the water year (Figure 1), or some combination.

   This effect in the south Delta is a direct impact of the proposed action, albeit one, which occurs at some distance from the Yuba River. The action requires a case by case analysis, to allow a determination of the impacts in the south Delta, and their significance. Such an analysis has not been provided at this time. Figure 2 summarizes the pumping patterns of the Federal and State facilities in the south Delta, while Figure 3 shows some recent shifts in those patterns.

   The increase in winter pumping (J-F-M) is now being scrutinized as one of the factors associated with the "Pelagic Organisms Decline (P.O.D.)," by the I.E.P.'s - P.O.D. Team (Figure 3).

   Attached for the record is my most recent Delta Smelt data summary table (developed from the CDFG-CVBDB website), which is located at:

   http://www.delta.dfg.ca.gov

   It includes all the summer tow net and fall mid water trawl survey data for 2005 (Figure 4, and Table 1). As you can see, the 2005 indices are the lowest on record for this species, causing concern for the survival of the species.

Thank you for the opportunity to testify today, I will be happy to answer any questions.

Figure 1 – Operational choices to accommodate the water transfer exports at the south Delta facilities of the CVP-SWP. Assume CVP is fully committed.

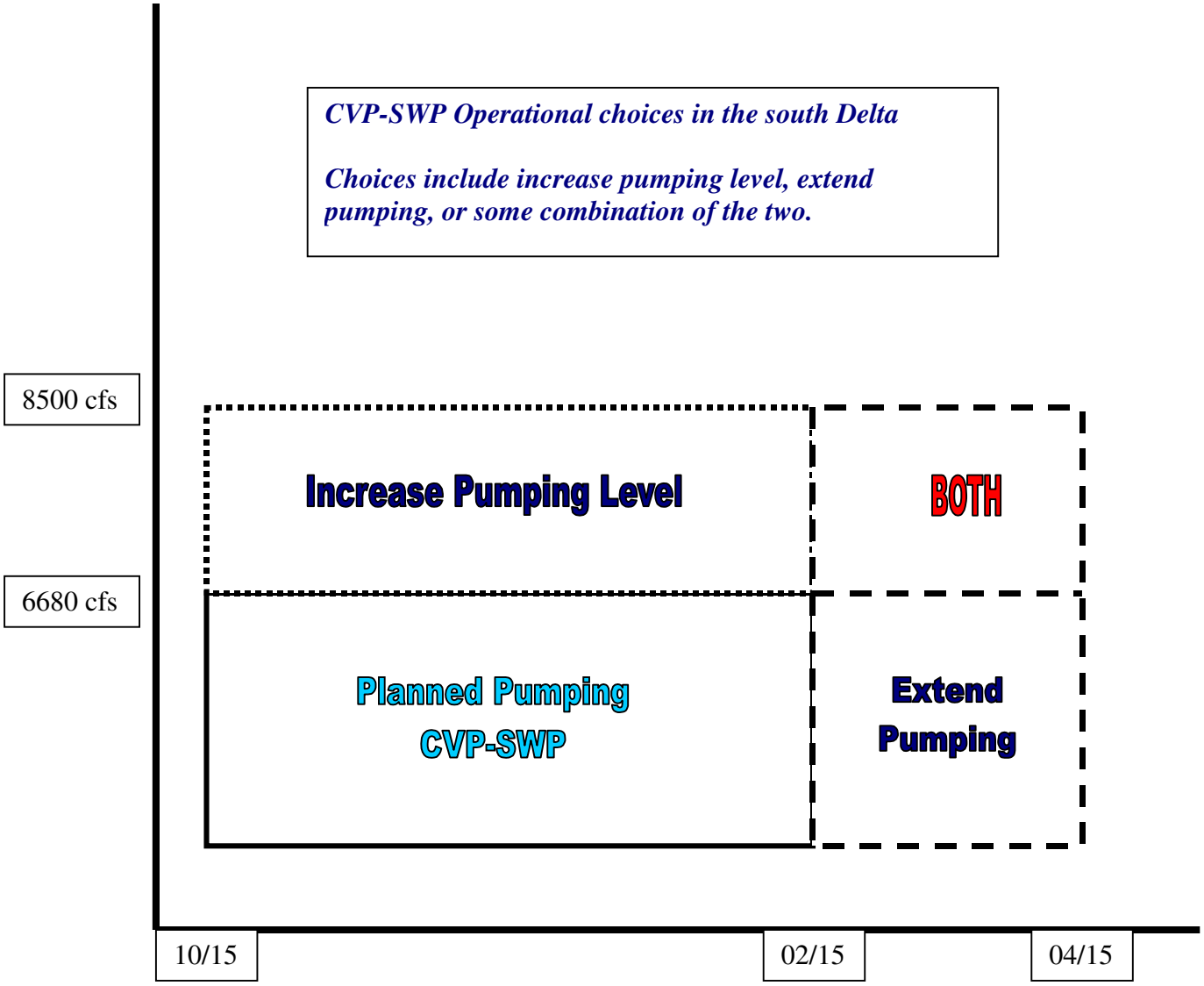

Figure 2 – Annual CVP-SWP Combined Exports by Calendar Year and Month.

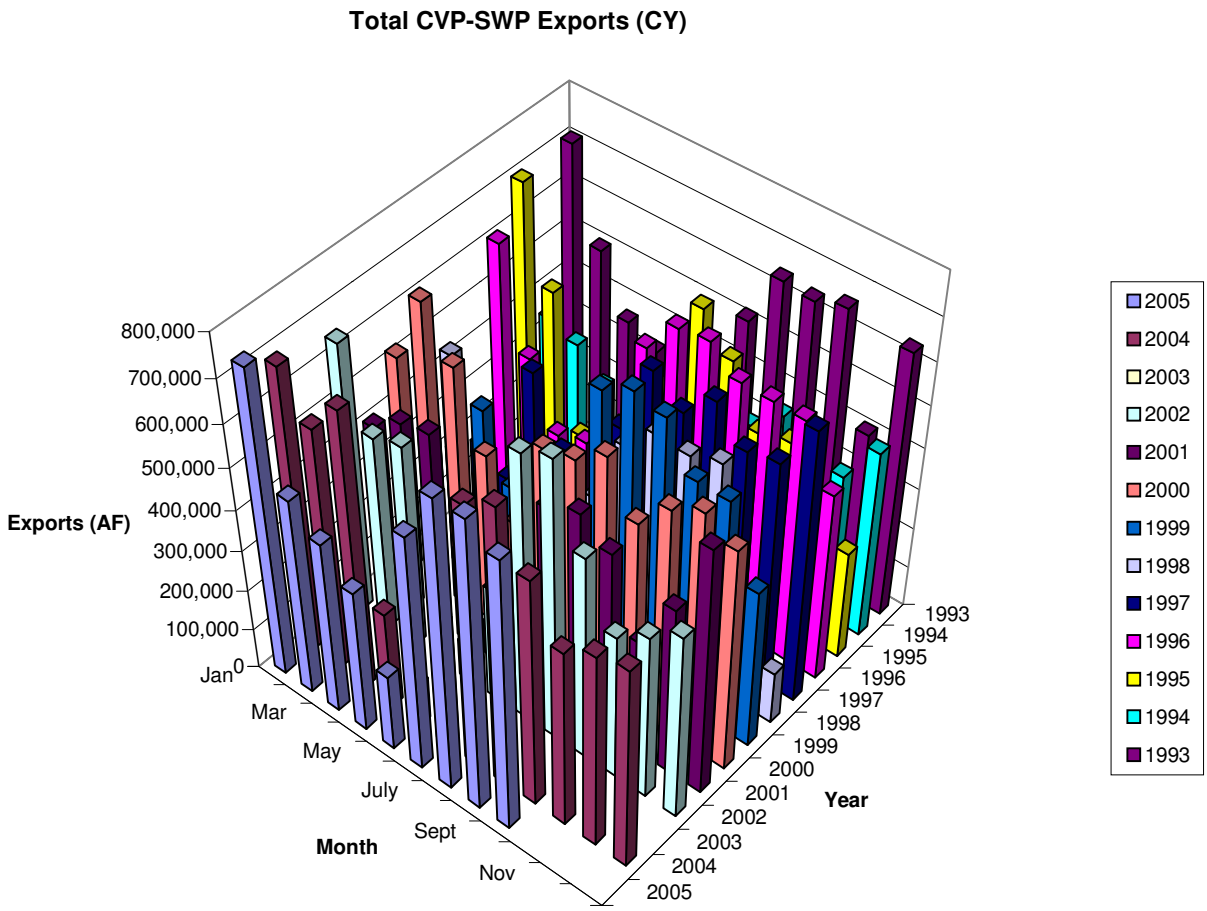

Figure 3 – Seasonal Patterns in CVP-SWP Export Pumping Showing Increase in Winter (J-F-M) Pumping in Recent Years (1990's vs. 2000's).

? 1990's vs. 2000's

Winter +624247 A/F
57.78% Increase
(Jan-Feb-Mar)

Spring +101648 A/F
13.45% Increase
(Apr-May-Jun)

Summer +143784 A/F
8.67% Increase
(Jul-Aug-Sep)

Fall +20093 A/F
1.45% Increase
(Oct-Nov-Dec)

Total +797078 A/F
16.34 % Increase
(Calendar Year)

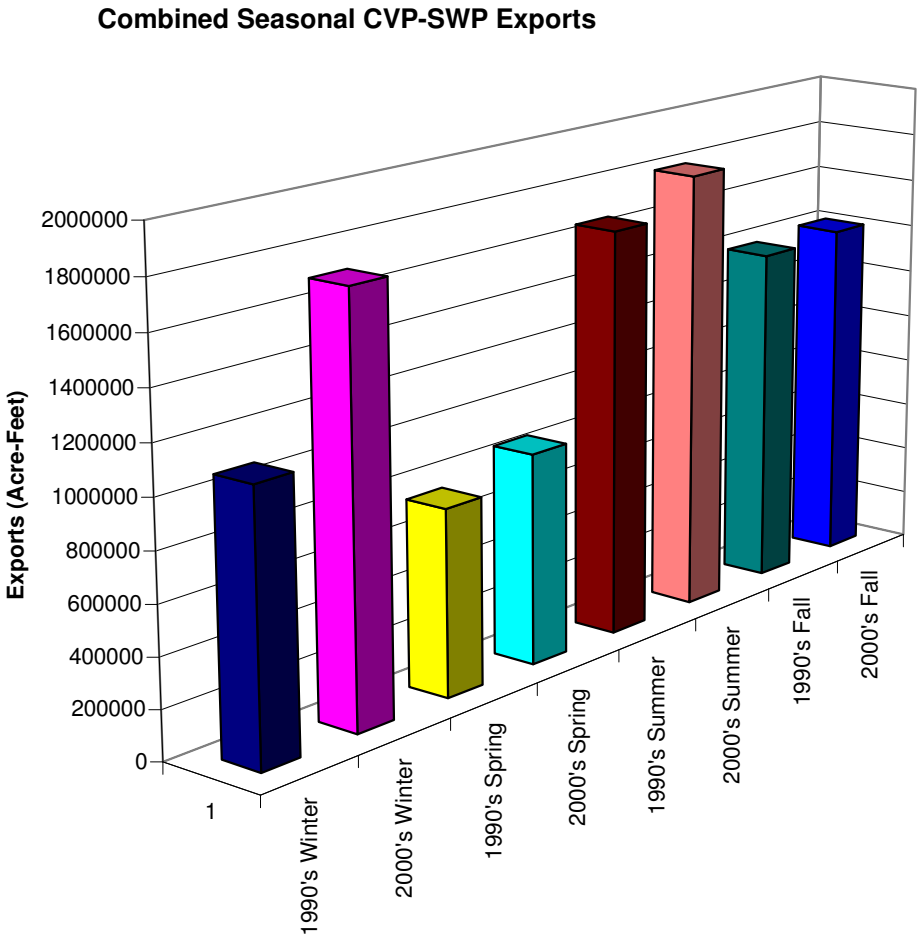

Figure 4 – Delta Smelt Indices, summer Tow Net Survey (TNS) and fall Midwater Trawl (FMWT), for the Period of Record.

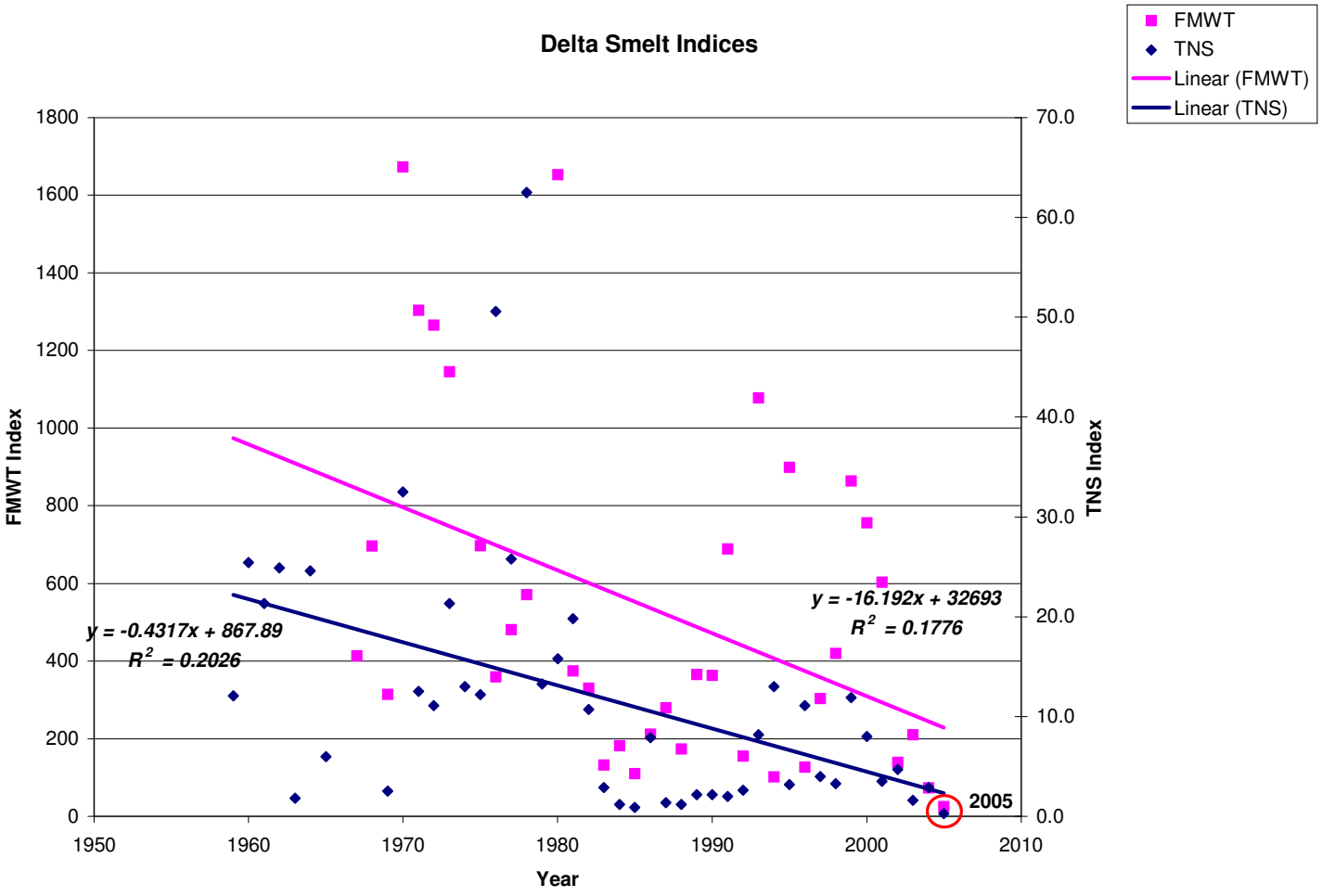

Table 1 – Delta Smelt Indices for the Period of Record.

Calendar	*Delta Smelt Index (TNS)*			*Midwater Trawl Index (DS)*				
Year	*Delta*	*Suisun Bay*	*Total*	*Sep*	*Oct*	*Nov*	*Dec*	*Total*
1958								
1959	NO	NO	12.1					
1960	NO	NO	25.4					
1961	NO	NO	21.3					
1962	NO	NO	24.9					
1963	NO	NO	1.8					
1964	NO	NO	24.6					
1965	NO	NO	6.0					
1966	NO	NO						
1967	NO	NO		93	165	31	125	414
1968	NO	NO		234	253	120	89	696
1969	NO	NO	2.5	148	78	56	33	315
1970	NO	NO	32.5	742	342	82	507	1673
1971	NO	NO	12.5	197	471	428	207	1303
1972	NO	NO	11.1	572	470	81	142	1265
1973	NO	NO	21.3	308	312	198	327	1145
1974	NO	NO	13.0	NO	NO	NO	NO	
1975	NO	NO	12.2	290	214	102	91	697
1976	NO	NO	50.6	70	42	121	127	360
1977	NO	NO	25.8	98	243	52	88	481
1978	NO	NO	62.5	167	65	31	309	572
1979	NO	NO	13.3	NO	NO	NO	NO	
1980	NO	NO	15.8	369	274	587	423	1653
1981	NO	NO	19.8	132	27	54	161	374
1982	NO	NO	10.7	45	47	76	162	330
1983	NO	NO	2.9	2	28	78	24	132
1984	NO	NO	1.2	47	44	67	24	182
1985	NO	NO	0.9	41	24	28	17	110
1986	NO	NO	7.9	92	15	34	71	212
1987	NO	NO	1.4	71	40	69	100	280
1988	NO	NO	1.2	58	67	19	30	174
1989	NO	NO	2.2	88	75	158	45	366
1990	NO	NO	2.2	109	50	188	17	364
1991	NO	NO	2.0	126	249	279	35	689
1992	NO	NO	2.6	72	3	57	24	156
1993	NO	NO	8.2	375	470	94	139	1078
1994	NO	NO	13.0	65	12	7	18	102
1995	NO	NO	3.2	120	349	352	78	899
1996	NO	NO	11.1	19	23	13	72	127
1997	NO	NO	4.0	15	109	71	108	303
1998	NO	NO	3.3	238	97	15	70	420
1999	NO	NO	11.9	198	380	114	172	864
2000	NO	NO	8.0	430	128	56	142	756
2001	NO	NO	3.5	75	481	17	30	603
2002	NO	NO	4.7	20	46	29	44	139
2003	NO	NO	1.6	15	136	17	42	210
2004	NO	NO	2.9	26	18	23	7	74
2005	NO	NO	0.3	3	9	7	7	26