State of California – The Resources Agency
ARNOLD SCHWARZENEGGER, Governor
DEPARTMENT OF FISH AND GAME
http://www.dfg.ca.gov
Central Valley Bay-Delta Branch
4001 North Wilson Way
Stockton, California 95205-2486
(209) 948-7800

February 20, 2004

Barbara McDonnell
Department of Water Resources
3251 'S' Street
Sacramento, California 95816

Dear Ms. McDonnell:

The State Water Project (SWP) mitigation loss calculation for 2003 is complete as required by the Four Pumps Agreement between the Department of Water Resources and the Department of Fish and Game. As previously agreed, loss of striped bass under 21 mm is based on the mean loss from 1985 through 1995. The estimated mitigation losses for 2003, which are based on five year mean values, are as follows:

SPECIES	NUMBER OF EQUIVALENTS
Striped bass	**405,042** (yearlings)
Chinook salmon	**177,912** (smolts)
Steelhead rainbow trout	**20,589** (yearlings)

The enclosed table lists the annual SWP loss estimates for yearling-equivalent striped bass, smolt-equivalent chinook salmon, and yearling-equivalent steelhead rainbow trout. The five year loss averages are also enclosed.

Sincerely,

Perry L. Herrgesell

Perry Herrgesell
Branch Chief
Central Valley Bay-Delta Branch

Enclosure

cc: Department of Water Resources
Sacramento, California
Ms. Delores Brown
Ms. Stephani Spaar

Department of Fish and Game
Stockton, California
Mr. Frank Wernette
Mr. Fred Jurick

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SWP YEARLING EQUIVALENT MITIGATION CALCULATION - 2003 20-Feb-04

	Yearling-Equivalent Striped Bass			Smolt-Equivalent Chinook Salmon			Yearling-Equivalent Steelhead		
YEAR	<20 mm	>20 mm	**Total Loss**	YOY	Yearling	**Total Loss**	YOY	Yearling	**Total Loss**
1982		244,347	**244,347**	230,043	3,193,747	**3,423,790**	0	73,478	**73,478**
1983		37,680	**37,680**	68,411	725,078	**793,489**	0	2,945	**2,945**
1984		873,853	**873,853**	290,696	947,503	**1,238,199**	0	1,713	**1,713**
1985	65,177	370,976	**436,153**	472,512	489,713	**962,225**	0	15,621	**15,621**
1986	35,315	944,061	**979,376**	1,147,249	2,300,866	**3,448,115**	0	15,663	**15,663**
1987	41,726	954,958	**996,684**	528,544	713,791	**1,242,334**	747	21,266	**22,013**
1988	59,625	874,055	**933,680**	409,103	747,953	**1,157,056**	0	25,080	**25,080**
1989	56,306	579,003	**635,309**	373,717	246,641	**620,358**	253	32,571	**32,824**
1990	7,717	401,353	**409,070**	90,098	188,228	**278,326**	0	19,187	**19,187**
1991	15,117	192,765	**207,882**	122,127	128,466	**250,593**	0	38,430	**38,430**
1992	13,452	299,687	**313,139**	21,341	224,603	**245,944**	275	39,931	**40,206**
1993	25,766	1,194,011	**1,219,777**	17,547	68,521	**86,068**	0	47,782	**47,782**
1994	2,253	122,656	**124,909**	8,217	25,073	**33,290**	0	1,738	**1,738**
1995	3,256	265,225	**268,481**	26,224	199,012	**225,236**	0	4,802	**4,802**
1996*	29,610	214,213	**243,823**	28,425	121,437	**149,862**	0	14,240	**14,240**
1997*	29,610	219,225	**248,835**	39,792	38,973	**78,765**	0	1,153	**1,153**
1998*	29,610	71,980	**101,590**	10,107	28,683	**38,790**	0	352	**352**
1999*	29,610	271,436	**301,046**	199,537	73,867	**273,404**	0	4,917	**4,917**
2000*	29,610	926,501	**956,111**	173,324	71,333	**244,657**	74	27,848	**27,922**
2001*	29,610	262,459	**292,069**	97,264	80,472	**177,736**	67	35,146	**35,213**
2002*	29,610	243,270	**272,880**	16,914	36,751	**53,665**	24	9,606	**9,630**
2003*	29,610	173,492	**203,102**	43,318	96,780	**140,098**	0	25,262	**25,262**

* After the sampling program was eliminated, YE Striped Bass <20mm estimate is the average of 85-95 loss.

Period	Yearling-Equivalent Striped Bass			Smolt-Equivalent Chinook Salmon			Yearling-Equivalent Steelhead		
	<20 mm	>20 mm	**Total Loss**	YOY	Yearling	**Total Loss**	YOY	Yearling	**Total Loss**
Mean 82-86	50,246	494,183	544,429	441,782	1,531,381	1,973,164	0	21,884	21,884
Mean 83-87	47,406	636,306	683,712	501,482	1,035,390	1,536,872	149	11,442	11,591
Mean 84-88	50,461	803,581	854,041	569,621	1,039,965	1,609,586	149	15,869	16,018
Mean 85-89	51,630	744,611	796,240	586,225	899,793	1,486,018	200	22,040	22,240
Mean 86-90	40,138	750,686	790,824	509,742	839,496	1,349,238	200	22,753	22,953
Mean 87-91	36,098	600,427	636,525	304,718	405,016	709,733	200	27,307	27,507
Mean 88-92	30,443	469,373	499,816	203,277	307,178	510,455	106	31,040	31,145
Mean 89-93	23,672	533,364	557,035	124,966	171,292	296,258	106	35,580	35,686
Mean 90-94	12,861	442,094	454,955	51,866	126,978	178,844	55	29,414	29,469
Mean 91-95	11,969	414,869	426,838	39,091	129,135	168,226	55	26,537	26,592
Mean 92-96	14,867	419,158	434,026	20,351	127,729	148,080	55	21,699	21,754
Mean 93-97	18,099	403,066	421,165	24,041	90,603	114,644	0	13,943	13,943
Mean 94-98	18,868	178,660	197,528	22,553	82,636	105,189	0	4,457	4,457
Mean 95-99	24,339	208,416	232,755	60,817	92,394	153,211	0	5,093	5,093
Mean 96-00	29,610	340,671	370,281	90,237	66,859	157,096	15	9,702	9,717
Mean 97-01	29,610	350,320	379,930	104,005	58,666	162,670	28	13,883	13,911
Mean 98-02	29,610	355,129	384,739	99,429	58,221	157,650	33	15,574	15,607
Mean 99-03	29,610	375,432	**405,042**	106,071	71,841	**177,912**	33	20,556	**20,589**