

**GRASSLAND BYPASS PROJECT**

**MONTHLY DATA REPORT**

**August 1997**

October 25, 1997

**Preliminary Results**

**A cooperative effort of:**

U.S. Bureau of Reclamation  
Central Valley Regional Water Quality Control Board  
U.S. Fish and Wildlife Service  
California Department of Fish and Game  
San Luis & Delta-Mendota Water Authority  
U.S. Environmental Protection Agency  
U.S. Geological Survey

**compiled by San Francisco Estuary Institute**

## GRASSLAND BYPASS PROJECT

## MONTHLY DATA REPORT

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**Table 1. Continuous water monitoring at Station A (inflow to San Luis Drain), August 1997.**

See Table 26 for explanation of footnotes and agency abbreviations.

<b>PARAMETER</b>	<b>Flow</b>
<b>DATA SOURCE</b>	<b>USBR</b>
<b>UNITS</b>	<b>cfs</b>
Aug-01-1997	50.3
Aug-02-1997	50.4
Aug-03-1997	49.0
Aug-04-1997	49.3 b
Aug-05-1997	46.1 i
Aug-06-1997	45.6 f
Aug-07-1997	53.5 f
Aug-08-1997	66.0 f
Aug-09-1997	58.4 b
Aug-10-1997	57.2
Aug-11-1997	59.4
Aug-12-1997	58.6
Aug-13-1997	55.0 b
Aug-14-1997	60.2 b
Aug-15-1997	62.0
Aug-16-1997	58.7
Aug-17-1997	49.6
Aug-18-1997	44.9
Aug-19-1997	40.9
Aug-20-1997	59.7
Aug-21-1997	52.8
Aug-22-1997	51.4
Aug-23-1997	49.5
Aug-24-1997	41.5
Aug-25-1997	39.6
Aug-26-1997	39.2
Aug-27-1997	32.7
Aug-28-1997	35.8
Aug-29-1997	39.4
Aug-30-1997	41.0
Aug-31-1997	42.6

**Table 2. Continuous water monitoring at Station B (discharge from San Luis Drain), August 1997.**

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance	Selenium (total)	Selenium (total) Load
DATA SOURCE	USBR	USBR	CVRWQCB	CVRWQCB	Computed
UNITS	cfs	°C	µS/cm	µg/l	lbs
Aug-01-1997	48.5	25.2	3,760	42.6	11.1
Aug-02-1997	51.6	25.5	3,620	39.2	10.9
Aug-03-1997	51.2	26.1	3,570	36.6	10.1
Aug-04-1997	50.3	26.6	3,540	32.9	8.9
Aug-05-1997	48.2	27.1	3,460	34.7	9.0
Aug-06-1997	45.8	27.8	3,810	41.2	10.2
Aug-07-1997	49.8	28.6	3,610	34.0	9.1
Aug-08-1997	57.0	28.9	4,250	51.0	15.7
Aug-09-1997	61.4	28.1	4,090	46.1	15.3
Aug-10-1997	58.7	26.9	3,880	46.9	14.8
Aug-11-1997	58.2	26.4	3,830	48.4	15.2
Aug-12-1997	61.0	26.2	3,870	46.0	15.1
Aug-13-1997	59.4	26.1	3,680	37.8	12.1
Aug-14-1997	59.5	26.3	3,730	38.4	12.3
Aug-15-1997	59.3	26.7	3,710	41.6	13.3
Aug-16-1997	62.3	26.4	3,430	35.6	12.0
Aug-17-1997	58.5	25.4	3,240	32.0	10.1
Aug-18-1997	50.8	25.0	3,430	40.3	11.0
Aug-19-1997	46.1	25.3	3,590	47.4	11.8
Aug-20-1997	45.7	25.5	3,330	37.8	9.3
Aug-21-1997	59.8	26.3	3,470	39.7	12.8
Aug-22-1997	54.9	26.7	3,820	39.5	11.7
Aug-23-1997	52.7	26.1	3,550	32.7	9.3
Aug-24-1997	50.7	26.0	3,450	40.5	11.1
Aug-25-1997	44.4	25.9	3,270	31.0	7.4
Aug-26-1997	42.8	25.7	3,540	35.7	8.2
Aug-27-1997	40.7	25.5	3,790	45.2	9.9
Aug-28-1997	37.1	25.4	4,020	51.6	10.3
Aug-29-1997	39.2	25.5	4,140	50.8	10.7
Aug-30-1997	43.1	25.4	3,880	38.3	8.9
Aug-31-1997	43.9	25.6	3,870	43.2	10.2
Mean	51.4	26.3	3,685	40.6	
<b>Total</b>					<b>348</b>
<b>Load Limitation for August 1997 (lbs)</b>					<b>533</b>

**Table 3. Continuous water monitoring at Station D  
(Mud Slough North downstream of drainage discharges), August 1997.**

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	usgs	usgs	usgs
UNITS	cfs	°C	µS/cm
Aug-01-1997	93	25.0	2,540
Aug-02-1997	94	25.0	2,550
Aug-03-1997	95	25.6	2,390
Aug-04-1997	84	26.1	2,390
Aug-05-1997	73	26.6	2,360
Aug-06-1997	62	27.3	2,800
Aug-07-1997	69	28.0	2,710
Aug-08-1997	76	28.5	2,870
Aug-09-1997	77	27.8	3,120
Aug-10-1997	77	26.7	2,890
Aug-11-1997	80	26.2	2,720
Aug-12-1997	83	26.2	2,830
Aug-13-1997	76	26.0	2,830
Aug-14-1997	74	26.2	3,050
Aug-15-1997	87	26.3	2,890
Aug-16-1997	103	26.3	2,560
Aug-17-1997	84	25.4	2,670
Aug-18-1997	73	25.0	2,810
Aug-19-1997	62	25.0	3,120
Aug-20-1997	53	25.4	3,050
Aug-21-1997	66	26.1	2,720
Aug-22-1997	63	26.4	2,570
Aug-23-1997	61	25.8	2,170
Aug-24-1997	63	25.7	2,000
Aug-25-1997	59	25.5	1,840
Aug-26-1997	60	25.4	1,910
Aug-27-1997	52	25.2	1,970
Aug-28-1997	43	25.0	2,060
Aug-29-1997	45	25.2	2,120
Aug-30-1997	51	25.0	2,100
Aug-31-1997	54	25.2	1,980

**Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), August 1997.**

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	usgs	usgs	usgs
UNITS	cfs	°C	µS/cm
Aug-01-1997	193	25.1	1,040
Aug-02-1997	228	25.3	891
Aug-03-1997	263	25.8	854
Aug-04-1997	269	26.2	905
Aug-05-1997	194	26.9	964
Aug-06-1997	126	27.7	1,140
Aug-07-1997	131	28.6	1,130
Aug-08-1997	163	28.7	980
Aug-09-1997	185	27.2	961
Aug-10-1997	207	25.6	924
Aug-11-1997	224	25.1	864
Aug-12-1997	221	25.4	825
Aug-13-1997	193	25.7	918
Aug-14-1997	178	25.9	953
Aug-15-1997	204	26.1	915
Aug-16-1997	257	25.3	822
Aug-17-1997	307	24.2	789
Aug-18-1997	331	24.2	717
Aug-19-1997	298	24.8	722
Aug-20-1997	235	25.3	849
Aug-21-1997	176	26.1	971
Aug-22-1997	152	26.4	990
Aug-23-1997	144	25.2	1,050
Aug-24-1997	166	25.0	973
Aug-25-1997	182	24.7	893
Aug-26-1997	172	24.6	875
Aug-27-1997	122	24.5	1,030
Aug-28-1997	93	24.4	1,160
Aug-29-1997	98	24.6	1,140
Aug-30-1997	108	24.5	1,040
Aug-31-1997	105	24.7	1,120

**Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), August 1997.**

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance	Selenium (total)
DATA SOURCE	USGS	USGS	CVRWQCB	CVRWQCB
UNITS	cfs	°C	µS/cm	µg/l
Aug-01-1997	673	NP	1,172	3.5
Aug-02-1997	612	NP	1,272	3.7
Aug-03-1997	619	NP	1,248	4.2
Aug-04-1997	660	26.0	1,123	3.5
Aug-05-1997	653	26.5	1,102	3.2
Aug-06-1997	551	27.1	1,196	3.4
Aug-07-1997	503	27.7	1,273	3.7
Aug-08-1997	525	27.8	1,316	3.8
Aug-09-1997	553	26.9	1,289	4.5
Aug-10-1997	569	25.9	1,347	5.3
Aug-11-1997	635	25.1	1,231	5.2
Aug-12-1997	678	25.5	1,082	4.3
Aug-13-1997	641	25.9	1,059	4.4
Aug-14-1997	581	26.0	1,126	4.7
Aug-15-1997	597	25.9	1,155	4.0
Aug-16-1997	602	25.6	1,204	4.6
Aug-17-1997	721	25.0	1,049	4.1
Aug-18-1997	832	24.6	941	3.2
Aug-19-1997	774	24.9	887	2.9
Aug-20-1997	739	25.0	895	3.3
Aug-21-1997	650	25.6	1,000	3.5
Aug-22-1997	630	25.9	1,043	3.7
Aug-23-1997	611	24.9	1,114	3.7
Aug-24-1997	600	24.5	1,126	3.4
Aug-25-1997	607	NP	1,151	3.5
Aug-26-1997	625	NP	1,030	3.1
Aug-27-1997	590	NP	1,023	2.8
Aug-28-1997	NP	NP	1,070	2.8
Aug-29-1997	487	NP	1,187	3.7
Aug-30-1997	453	24.3	1,335	4.2
Aug-31-1997	475	24.3	1,343	4.6

Table 6. Weekly water quality monitoring at Station A (inflow to San Luis Drain), 1997.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Total Suspended Solids	Selenium (total)	Selenium (dissolved)	Boron
DATA SOURCE	USBR	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	mg/l	µg/l	µg/l	mg/l
Jul-02-1997	56.3	NA	NA	4,660	130	65.8	64.1	P
Jul-09-1997	50.0	NA	NA	4,140	150	40.6	40.5	P
Jul-16-1997	51.8	NA	NA	4,220	120	54.5	53.0	P
Jul-23-1997	51.4	NA	NA	4,050	110	40.5	43.5	P
Jul-30-1997	47.6	NA	NA	3,950	170	45.5	44.6	P
Aug-06-1997	45.6 f	NA	NA	4,130	120	53.8	50.4	P
Aug-13-1997	55 b	NA	NA	3,650	140	38.4	39.0	P
Aug-20-1997	59.7	NA	NA	3,330	160	30.8	30.4	P
Aug-27-1997	32.7	NA	NA	3,990	NA	55.4	53.7	P

Table 7. Weekly water quality monitoring at Station B (discharge from San Luis Drain), 1997.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Total Suspended Solids	Selenium (total)	Selenium (dissolved)	Boron
DATA SOURCE	USBR	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	mg/l	µg/l	µg/l	mg/l
Jul-02-1997	54.0	24.3	8.4	4,410	30	59.9	59.8	P
Jul-10-1997	50.8	25.4	8.3	4,030	25	34.9	35.0	P
Jul-17-1997	52.0	26.6	8.2	4,060	18	37.0	37.0	P
Jul-24-1997	51.1	27.1	8.0	4,000	17	41.8	39.5	P
Jul-31-1997	49.4	25.4	6.3*	3,940	17	43.7	42.4	P
Aug-07-1997	49.8	27.1	7.6	3,190	21	27.9	27.7	P
Aug-14-1997	59.5	26.6	8.0	3,780	18	42.3	41.7	P
Aug-21-1997	59.8	27.7	7.2	3,240	32	31.2	31.0	P
Aug-27-1997	40.7	25.4	7.2	3,840	17	48.9	47.2	P

Table 8. Weekly water quality monitoring at Station C (Mud Slough North upstream of drainage discharges), 1997.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER		Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	.	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	.	°C		µS/cm	µg/l	mg/l
Jul-02-1997	.	26.0	8.3	1,542	1.0	P
Jul-10-1997	.	24.9	8.1	1,208	1.4	P
Jul-17-1997	.	26.6	8.3	1,549	1.3	P
Jul-24-1997	.	28.2	8.1	1,165	1.5	P
Jul-31-1997	.	26.6	8.0	859	1.1	P
Aug-07-1997	.	27.1	8.3	1,130	0.8	P
Aug-14-1997	.	27.7	7.3	1,161	0.6	P
Aug-21-1997	.	31.6	8.2	1,220	0.6	P
Aug-27-1997	.	25.4	5.8*	1,258	1.1	P



**Table 9. Weekly water quality monitoring at Station D (Mud Slough North downstream of drainage discharges), 1997.**

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	USGS	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	µg/l	mg/l
Jul-02-1997	62	24.9	8.4	3,990	50.4	P
Jul-10-1997	71	25.4	8.3	3,310	29.7	P
Jul-17-1997	63	27.7	8.4	3,730	33.3	P
Jul-24-1997	71	27.7	7.9	3,510	36.4	P
Jul-31-1997	102	26.6	7.2	2,550	18.4	P
Aug-07-1997	69	27.1	8.0	3,150	28.6	P
Aug-14-1997	74	26.6	7.6	3,650	37.5	P
Aug-21-1997	66	28.8	7.8	3,100	32.9	P
Aug-27-1997	52	25.4	6.0*	3,340	40.6	P

**Table 10. Weekly water quality monitoring at Station F (Salt Slough at Lander Avenue), 1997.**

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	USBR	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	µg/l	mg/l
Jul-02-1997	192	23.2	7.7	1,074	1.1	P
Jul-10-1997	124	23.8	7.8	1,310	0.9	P
Jul-17-1997	143	25.4	8.6	1,030	1.0	P
Jul-24-1997	113	25.4	8.2	1,142	0.9	P
Jul-31-1997	NP	25.4	8.4	975	1.1	P
Aug-07-1997	69	26.0	7.3	1,131	1.3	P
Aug-14-1997	74	26.6	7.8	922	0.8	P
Aug-21-1997	66	26.6	7.6	982	0.9	P
Aug-27-1997	52	26.6	6.0*	1,110	1.0	P

**Table 11. Weekly water quality monitoring at Station G (San Joaquin River at Fremont Ford), 1997.**

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	.	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	.	°C		µS/cm	µg/l	mg/l
Jul-02-1997	.	22.1	7.9	1,100	1.0	P
Jul-10-1997	.	24.3	8.0	1,392	1.0	P
Jul-17-1997	.	25.4	8.0	1,200	0.9	P
Jul-24-1997	.	25.4	7.9	1,195	1.0	P
Jul-31-1997	.	25.4	7.5	944	1.0	P
Aug-07-1997	.	26.6	8.1	1,211	1.0	P
Aug-14-1997	.	26.0	7.9	990	0.9	P
Aug-21-1997	.	27.1	7.8	849	0.9	P
Aug-27-1997	.	26.6	8.2	952	1.0	P

**Table 12. Weekly water quality monitoring at Station H (San Joaquin River at Hills Ferry), 1997.**

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	°C		µS/cm	µg/l	mg/l
Jul-02-1997	22.7	8.1	1,741	10.0	P
Jul-10-1997	24.3	8.2	1,881	11.1	P
Jul-17-1997	25.4	7.7	1,820	7.5	P
Jul-24-1997	24.9	7.8	1,708	9.2	P
Jul-31-1997	23.2	6.6*	1,408	5.4	P
Aug-07-1997	26.0	7.9	1,716	7.5	P
Aug-14-1997	25.4	7.5	1,584	8.0	P
Aug-21-1997	26.0	7.6	1,300	5.8	P
Aug-27-1997	27.7	8.0	1,376	4.9	P

**Table 13. Weekly water quality monitoring at Station J (Camp 13 Ditch), 1997.**

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	°C		µS/cm	µg/l	mg/l
Jul-02-1997	NA	NA	563	1.1	P
Jul-09-1997	NA	NA	460	1.1	P
Jul-16-1997	NA	NA	614	1.6	P
Jul-23-1997	NA	NA	614	1.2	P
Jul-30-1997	NA	NA	1,110	2.2	P
Aug-06-1997	NA	NA	1,399	2.2	P
Aug-13-1997	NA	NA	815	3.5	P
Aug-20-1997	NA	NA	352	1.0	P
Aug-27-1997	NA	NA	459	2.3	P

**Table 14. Weekly water quality monitoring at Station K (Agatha Canal), 1997.**

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	°C		µS/cm	µg/l	mg/l
Jul-02-1997	NA	NA	436	1.1	P
Jul-09-1997	NA	NA	396	1.0	P
Jul-16-1997	NA	NA	406	1.6	P
Jul-23-1997	NA	NA	419	1.6	P
Jul-30-1997	NA	NA	419	1.2	P
Aug-06-1997	NA	NA	373	1.5	P
Aug-13-1997	NA	NA	354	1.0	P
Aug-20-1997	NA	NA	368	1.5	P
Aug-27-1997	NA	NA	442	2.3	P

Table 15. Weekly water quality monitoring at Station L (San Luis Canal at Henry Miller Road), 1997.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	°C		µS/cm	µg/l	mg/l
Jul-02-1997	NA	NA	698	1.9	P
Jul-09-1997	NA	NA	917	2.5	P
Jul-16-1997	NA	NA	628	1.8	P
Jul-23-1997	NA	NA	762	2.1	P
Jul-30-1997	NA	NA	750	1.8	P
Aug-06-1997	NA	NA	886	2.0	P
Aug-13-1997	NA	NA	619	1.5	P
Aug-20-1997	NA	NA	781	2.0	P
Aug-27-1997	NA	NA	708	2.7	P

Table 16. Weekly water quality monitoring at Station M (Santa Fe Canal at Henry Miller Road), 1997.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	°C		µS/cm	µg/l	mg/l
Jul-02-1997	NA	NA	799	2.2	P
Jul-09-1997	NA	NA	946	2.6	P
Jul-16-1997	NA	NA	841	2.2	P
Jul-23-1997	NA	NA	797	2.1	P
Jul-30-1997	NA	NA	938	2.1	P
Aug-06-1997	NA	NA	976	2.2	P
Aug-13-1997	NA	NA	776	1.9	P
Aug-20-1997	NA	NA	825	2.1	P
Aug-27-1997	NA	NA	682	2.7	P

Table 17. Weekly water quality monitoring at Station N (San Joaquin River at Crow's Landing), 1997.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	USGS	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	µg/l	mg/l
Jul-02-1997	618	21.0	7.9	1,247	4.8	P
Jul-10-1997	541	23.8	8.1	1,354	5.0	P
Jul-17-1997	541	24.3	7.6	1,230	4.0	P
Jul-24-1997	599	23.8	7.7	1,080	3.9	P
Jul-31-1997	620	23.2	6.9	1,281	4.8	P
Aug-07-1997	503	26.0	7.9	1,161	2.8	P
Aug-14-1997	581	25.4	7.3	1,085	4.5	P
Aug-21-1997	650	26.0	7.4	990	3.3	P
Aug-28-1997	NP	23.2	7.2	1,073	2.9	P

Table 18. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from August 1996 to August 1997. Each value is the mean of 4 replicates with 10 fish in each replicate.

See Table 26 for explanation of footnotes and agency abbreviations.

LOCATION	Station B	Station C	Station D	Station F	Delta Mendota Canal	Laboratory Control
DATA SOURCE	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA
UNITS	%	%	%	%	%	%
August-96	NT	98	93	96	90	100
October-96	68	83	88	88	93	98
November-96	98	98	95	85	95	93
December-96	98	50*	78*	93	98	100
January-97	95	92	83	90	88	95
February-97	95	90*	95	90	100	48
March-97	95	98	98	93	98	95
April-97	95	100	95	98	88	83
May-97	95	100	95	100	93	100
June-97	93	98	95	93	90	90
July-97	100	93	98	98	100	98
August-97	88	85	95	78	83	98

Table 19. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from August 1996 to August 1997. Each value is the mean of 4 replicates with 10 fish in each replicate.

See Table 26 for explanation of footnotes and agency abbreviations.

LOCATION	Station B	Station C	Station D	Station F	Delta Mendota Canal	Laboratory Control
DATA SOURCE	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA
UNITS	mg	mg	mg	mg	mg	mg
August-96	NT	0.56	0.45	0.44	0.50	0.47
October-96	0.56	0.56	0.53*	0.59	0.60	0.59
November-96	0.53	0.57	0.63	0.53	0.55	0.59
December-96	0.71	0.71	0.83	0.65	0.68	0.58
January-97	0.74	0.80	0.80	0.83	0.65	0.71
February-97	0.69*	0.79	0.77	0.92	0.76	0.31
March-97	0.99	0.96	1.01	0.90	0.81	0.81
April-97	1.11	1.02	1.06	1.15	1.05	0.83
May-97	0.85	0.91	0.95	0.89	0.88	0.80
June-97	0.66	0.69	0.71	0.72	0.68	0.73
July-97	0.97	0.80*	0.95	0.91	0.92	0.89
August-97	0.69	0.56	0.73	0.60	0.59	0.77

Table 20. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from August 1996 to August 1997. Each value is the mean of 10 replicates with 1 animal in each replicate.

See Table 26 for explanation of footnotes and agency abbreviations.

LOCATION	Station B	Station C	Station D	Station F	Delta Mendota Canal	Laboratory Control
DATA SOURCE	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA
UNITS	%	%	%	%	%	%
March-96	NT	90	90	100	100	100
August-96	NT	100	100	100	100	100
October-96	90	100	100	100	100	70
November-96	100	90	90	100	100	100
December-96	100	80	80	100	100	100
January-97	100	90	100	100	100	100
February-97	100	100	100	100	100	100
March-97	100	90	90	80	100	50
April-97	80	90	100	90	90	50
May-97	90	90	90	80	90	30
June-97	90	100	70	100	80	90
July-97	90	90	100	100	100	90
August-97	90	100	100	100	80	90

Table 21. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from August 1996 to August 1997. Each value is the mean of 10 replicates with 1 animal in each replicate.

See Table 26 for explanation of footnotes and agency abbreviations.

LOCATION	Station B	Station C	Station D	Station F	Delta Mendota Canal	Laboratory Control
DATA SOURCE	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA
UNITS	neonates per female	neonates per female	neonates per female	neonates per female	neonates per female	neonates per female
August-96	NT	27.0	32.8	27.4	27.8	26.4
October-96	16.8	20.2	17.9	13.1	12.9	16.0
November-96	30.6	21.8	21.9	22.4	21.5	15.9
December-96	23.2	14.0	17.2	17.8	16.8	14.8
January-97	15.2	15.4	15.3	15.6	13.6	10.9
February-97	25.1	23.0	22.8	20.1	18.0	22.7
March-97	22.8	16.6	15.3	9.7	8.9	5.5
April-97	23.6	24.4	24.6	16.3	12.9	10.0
May-97	30.6	33.8	34.0	21.6	17.2	20.0
June-97	50.9	58.8	41.1	50.2	29.6	31.6
July-97	35.6	28.1	33.2	27.7	19.1	17.1
August-97	55.8	55.4	53.1	54.1	40.7	44.3

Table 22. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from August 1996 to August 1997. Each value is the mean of 4 replicates.

See Table 26 for explanation of footnotes and agency abbreviations.

LOCATION	Station B	Station C	Station D	Station F	Delta Mendota Canal	Laboratory Control
DATA SOURCE	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA
UNITS	10 <sup>5</sup> cells/ml	10 <sup>5</sup> cells/ml	10 <sup>5</sup> cells/ml	10 <sup>5</sup> cells/ml	10 <sup>5</sup> cells/ml	10 <sup>5</sup> cells/ml
August-96	NT	6.2*	5.6*	13.8	16.8	14.7
October-96 <sup>(2)</sup>	4.3	12.3	11.3	8.5	3.5	36.6
November-96 <sup>(3)</sup>	16.6	56.1	48.9	33.5	39.7	91.1
December-96	0.5*	5.9	0.5*	4.2	3.4	18.9
January-97	11.0	9.3	12.5	11.6	8.0	8.2
February-97	10.6	5.5*	8.2*	13.7	19.8	22.2
March-97	11.0 *	13.8	11.7 *	6.0 *	20.0	21.6
April-97	19.7*	35.4*	46.5	30.8*	78.5	62.9
May-97	22.4	12.6*	18.6*	16.8*	26.3	17.2
June-97	42.0*	55.6	44.6	44.4	54.2	57.9
July-97	41.9	72.5	47.6	66.6	45.1	60.2
August-97	56.2	61.6	43.0	52.6	47.5	59.9

Table 23. Summary of selenium concentrations in grab water samples collected at study sites for use in laboratory toxicity tests, May 1996 to August 1997.

See Table 26 for explanation of footnotes and agency abbreviations.

LOCATION	Station B	Station C	Station D	Station F	Delta Mendota Canal
DATA SOURCE	SLDMWA/USBR	SLDMWA/USBR	SLDMWA/USBR	SLDMWA/USBR	SLDMWA/USBR
UNITS	µg/L	µg/L	µg/L	µg/L	µg/L
May-15-1997	79	<2	58	<2	<2
May-17-1997	64	<2	47	<2	<2
May-20-1997	64	<2	34	<2	<2
Jun-10-1997	46	<2	28	<2	<2
Jun-12-1997	56	<2	37	<2	<2
Jun-14-1997	75	<2	43	<2	<2
Jul-08-1997	44	<2	24	<2	<2
Jul-10-1997	36	<2	34	<2	<2
Jul-12-1997	32	<2	36	<2	<2
Aug-05-1997	30	<2	17	<2	<2
Aug-07-1997	29	<2	31	<2	<2
Aug-09-1997	37	<2	44	<2	<2

Table 24. Summary of sulfate concentrations in grab water samples collected at study sites for use in laboratory toxicity tests, May 1997 to August 1997.

See Table 26 for explanation of footnotes and agency abbreviations.

LOCATION	Station B	Station C	Station D	Station F	Delta Mendota Canal
DATA SOURCE	SLDMWA/USBR	SLDMWA/USBR	SLDMWA/USBR	SLDMWA/USBR	SLDMWA/USBR
UNITS	µg/L	µg/L	µg/L	µg/L	µg/L
May-15-1997	1,450	117	683	111	13
May-17-1997	1,320	253	1,070	209	23
May-20-1997	1,300	102	688	181	36
Jun-10-1997	940	76	458	184	48
Jun-12-1997	1,360	278	1,120	179	36
Jun-14-1997	1,520	248	1,160	157	36
Jul-08-1997	827	183	489	88	38
Jul-10-1997	1,170	210	939	168	20
Jul-12-1997	1,170	313	1,080	144	19
Aug-05-1997	958	173	666	132	51
Aug-07-1997	944	185	926	146	17
Aug-09-1997	1,120	182	1,120	122	16

Table 25. Summary of quarterly in situ bioassay results from December 1995 to May 1997.

Results are the number of live fathead minnows (*Pimephales promelas*) per number of fish recovered at the end of the 7 day deployment at each station (initial count of 80 used at each station).

See Table 26 for explanation of footnotes and agency abbreviations.

LOCATION	Windmill (4 day old larvae)	Station B (4 day old larvae)	Station D (4 day old larvae)	Station D (14 day old larvae)	Station F (4 day old larvae)	Station F (14 day old larvae)
DATA SOURCE	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA
UNITS	# alive/total count	# alive/total count	# alive/total count	# alive/total count	# alive/total count	# alive/total count
December-95 <sup>(4)</sup>	NT	NT	NT	NT	NT	NT
March-96 <sup>(5)</sup>	80/80	NT	NT	44/44	NT	70/70
August-96 <sup>(6)</sup>	NT	NT	13/19	22/29	28/40	20/49
November-1996 <sup>(7)</sup>	46/62	63/68	0/2	.	16/36	.
February-1997 <sup>(8)</sup>	NT	3/13	0/0	.	0/11	.
May-1997	64/66	0/0	0/24	.	5/9	.

Table 26. Explanations of footnotes and agency abbreviations.

Footnote	Explanation
CVRWQCB	California Regional Water Quality Control Board, Central Valley Region
SLDMWA	San Luis & Delta-Mendota Water Authority
USBR	U.S. Bureau of Reclamation
USGS	U.S. Geological Survey
.	Not applicable
<	less than
*	possible calibration problem
i	value based on interpolation
b	value based on partial readings
f	field instantaneous reading
P	pending, data not available at this time but will be available in the future
NA	not analyzed - operator error, data will not be available in the future
NP	data not provided - future unknown
NT	not tested
(1)	This test used <i>Ceriodaphnia dubia</i> in water with high hardness. Results were compared to hard water and moderately hard water for definitive bioassays. All treatment means were significantly different from the laboratory control (hard water) for definitive tests.
(2)	Selenate added
(3)	Lab Control was significantly different from DMC, Site B, and Site F samples. (There was no significant difference for site samples versus DMC water.)
(4)	In situ cages could not be deployed due to wet weather conditions.
(5)	Baseline results for 3/96 are for 14-day old larvae. There was no survival for the 24-hour old larvae.
(6)	Windmill station was dry due to water drainage. Use of plastic screened beakers for Station F during 8/96 with use of 4-day old larvae resulted in 0/39. Apparent cause of mortality was elevated temperature and sediment which was found in all cages and beakers.
(7)	Heavy silt accumulation was noted in Sites D and F cages and light silt accumulation was observed in both the Windmill site and Site B.
(8)	Moderate silt accumulation was noted in Sites B and F cages and light silt accumulation was observed in Site D.
*	Significantly reduced from Delta Mendota Canal (p<0.05)