

# GRASSLAND BYPASS PROJECT

## MONTHLY DATA REPORT

**August 2000**

November 6, 2000

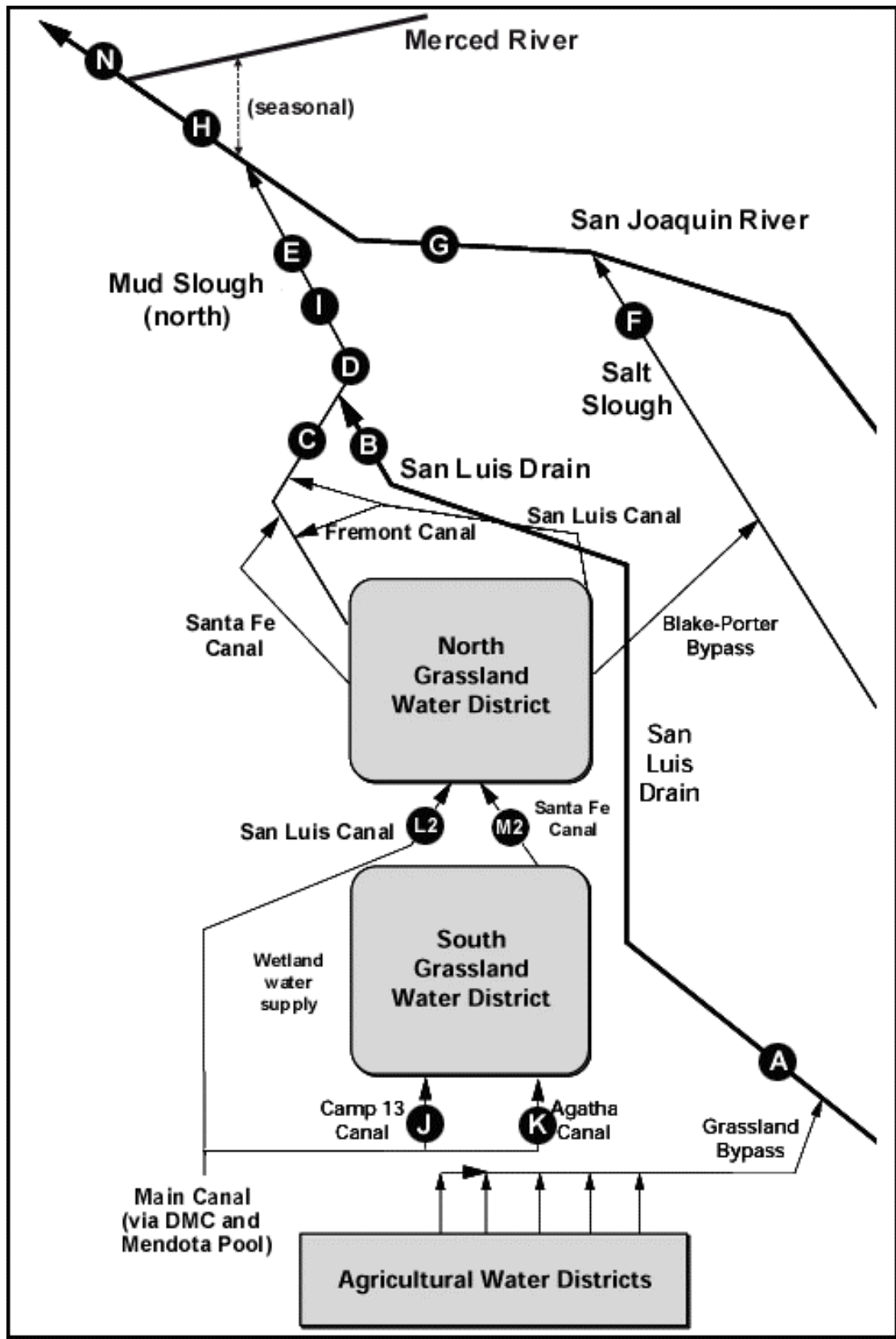
### Preliminary Results

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

## LIST OF TABLES FOR MONTHLY REPORT

Continuous Monitoring

1. Continuous water monitoring at Station A (inflow to San Luis Drain), August 2000.
2. Continuous water monitoring at Station B (discharge from San Luis Drain), August 2000.
3. Continuous water monitoring at Station D (Mud Slough North downstream of drainage discharges), August 2000.
4. Continuous water monitoring at Station F (Salt Slough at Highway 165), August 2000.
5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), August 2000.

Weekly Monitoring

- 6a. Weekly water quality monitoring at Station A (inflow to San Luis Drain), taken from grab samples.
- 6b. Weekly water quality monitoring at Station A (inflow to San Luis Drain), taken from composite samples.
7. Weekly water quality monitoring at Station B (discharge from San Luis Drain).
8. Weekly water quality monitoring at Station C (Mud Slough North upstream of drainage discharge).
9. Weekly water quality monitoring at Station D (Mud Slough North downstream of drainage discharge).
10. Weekly water quality monitoring at Station F (Salt Slough at Lander Avenue).
11. Weekly water quality monitoring at Station G (San Joaquin River at Fremont Ford).
12. Weekly water quality monitoring at Station H (San Joaquin River at Hills Ferry).
13. Weekly water quality monitoring at Station J (Camp 13 Ditch).
14. Weekly water quality monitoring at Station K (Agatha Canal).
15. Weekly water quality monitoring at Station L2 (San Luis Canal at splits).
16. Weekly water quality monitoring at Station M2 (Santa Fe Canal at weir).
17. Weekly water quality monitoring at Station N (San Joaquin River at Crow's Landing).

Monthly Monitoring

18. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from September 1999 to August 2000.
19. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from September 1999 to August 2000.
20. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from September 1999 to August 2000..
21. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from September 1999 to August 2000.
22. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from September 1999 to August 2000.
23. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, June 2000 to August 2000.
24. Summary of sulfate concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, June 2000 to August 2000.
25. Summary of total suspended solids concentrations in grab water samples collected from June 2000 to August 2000.
26. Explanations of footnotes and agency abbreviations.

**Table 1. Continuous water monitoring at Station A (inflow to San Luis Drain), August 2000. Flow data reported by SLDMWA since October 1, 1999.**

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Specific Conductance
DATA SOURCE	SLDMWA	SLDMWA
UNITS	cfs	µS/cm
Aug-01-2000	57	3,810
Aug-02-2000	63	3,870
Aug-03-2000	61	3,830
Aug-04-2000	58	3,640
Aug-05-2000	53	3,800
Aug-06-2000	55	3,810
Aug-07-2000	60	3,670
Aug-08-2000	58	3,790
Aug-09-2000	60	3,720
Aug-10-2000	59	3,730
Aug-11-2000	57	3,490
Aug-12-2000	57	3,380
Aug-13-2000	55	3,540
Aug-14-2000	51	3,850
Aug-15-2000	52	3,700
Aug-16-2000	51	3,910
Aug-17-2000	55	3,650
Aug-18-2000	70	3,150
Aug-19-2000	69	3,320
Aug-20-2000	66	3,140
Aug-21-2000	59	3,570
Aug-22-2000	57	3,570
Aug-23-2000	61	3,690
Aug-24-2000	61	3,400
Aug-25-2000	57	3,570
Aug-26-2000	57	3,860
Aug-27-2000	60	3,890
Aug-28-2000	57	3,930
Aug-29-2000	62	3,700
Aug-30-2000	57	3,990
Aug-31-2000	53	4,090
Mean	58	3,680

**Table 2. Continuous water monitoring at Station B (discharge from San Luis Drain), August 2000.**

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Boron	Specific Conductance	Selenium (total)	Selenium (total) Load
DATA SOURCE	usgs	USGS	CVRWQCB	CVRWQCB	CVRWQCB	Computed
UNITS	cfs	°C	mg/L	µS/cm	µg/L	lbs
Aug-01-2000	57	28.5	7.2	3,980	37.6	11.6
Aug-02-2000	55	29.0	6.9	3,830	37.6	11.2
Aug-03-2000	60	29.1	6.6	3,840	42.6	13.8
Aug-04-2000	59	28.5	6.9	3,770	34.4	10.9
Aug-05-2000	58 e	NA	6.7	3,670	33.1	10.4
Aug-06-2000	54 e	NA	6.9	4,110	48.0	14.0
Aug-07-2000	53 e	NA	6.6	3,700	33.5	9.6
Aug-08-2000	57	26.7	6.7	3,690	31.8	9.8
Aug-09-2000	55	26.5	7.1	3,840	35.8	10.6
Aug-10-2000	57	26.2	6.8	3,710	36.0	11.1
Aug-11-2000	56	25.7	6.7	3,650	36.0	10.9
Aug-12-2000	56	26.5	6.9	3,820	36.4	11.0
Aug-13-2000	54	26.9	6.8	3,650	30.1	8.8
Aug-14-2000	52	27.0	6.7	3,640	28.3	7.9
Aug-15-2000	50	27.0	6.1	3,320	23.3	6.3
Aug-16-2000	50	27.0	6.3	3,420	24.5	6.6
Aug-17-2000	49	27.2	6.3	3,450	24.7	6.5
Aug-18-2000	55	26.9	6.8	3,730	28.4	8.4
Aug-19-2000	67	26.2	6.8	3,870	34.6	12.5
Aug-20-2000	66	25.5	6.2	3,600	30.4	10.8
Aug-21-2000	63	25.2	5.2	3,160	27.7	9.4
Aug-22-2000	57	25.6	5.5	3,340	31.0	9.5
Aug-23-2000	56	25.5	5.5	3,250	39.0	11.8
Aug-24-2000	58	25.3	6.1	3,530	30.9	9.7
Aug-25-2000	59	25.6	6.3	3,540	29.2	9.3
Aug-26-2000	55	26.1	6.2	3,670	40.0	11.9
Aug-27-2000	56	26.4	5.8	3,420	37.6	11.4
Aug-28-2000	57	26.5	5.8	3,440	31.2	9.6
Aug-29-2000	56	25.2	6.4	3,770	36.7	11.1
Aug-30-2000	59	23.9	6.5	3,870	44.7	14.2
Aug-31-2000	55	23.7	6.5	4,000	44.6	13.2
Mean	56	26.4	6.4	3,650	34.2	
<b>Total</b>						<b>324</b>

<b>Load Limitation for August 2000</b>	<b>(lbs)</b>	<b>480</b>
--	--------------	------------

**Table 3. Continuous water monitoring at Station D  
(Mud Slough North downstream of drainage discharges), August 2000..**

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-01-2000	55	27.8	3,620
Aug-02-2000	52	28.5	3,490
Aug-03-2000	55	28.7	3,580
Aug-04-2000	57	28.3	3,430
Aug-05-2000	57	27.6	3,410
Aug-06-2000	55	27.2	3,680
Aug-07-2000	57	26.9	3,290
Aug-08-2000	64	26.4	3,120
Aug-09-2000	63	26.2	3,190
Aug-10-2000	61	25.8	3,190
Aug-11-2000	58	25.4	3,150
Aug-12-2000	55	26.0	3,190
Aug-13-2000	55	26.4	3,090
Aug-14-2000	55	26.4	3,010
Aug-15-2000	56	26.4	2,640
Aug-16-2000	58	26.4	2,620
Aug-17-2000	56	26.6	2,730
Aug-18-2000	58	26.1	2,920
Aug-19-2000	68	25.5	2,830
Aug-20-2000	68	24.9	2,830
Aug-21-2000	65	24.7	2,450
Aug-22-2000	60	25.1	2,570
Aug-23-2000	59	25.2	2,480
Aug-24-2000	63	24.7	2,620
Aug-25-2000	63	25.0	2,650
Aug-26-2000	58	25.5	2,660
Aug-27-2000	58	25.8	2,600
Aug-28-2000	60	25.8	2,480
Aug-29-2000	60	24.3	2,650
Aug-30-2000	61	23.2	2,790
Aug-31-2000	57	23.1	2,810

**Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), August 2000.**

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-01-2000	228	28.1	851
Aug-02-2000	204	28.8	840
Aug-03-2000	184	28.9	863
Aug-04-2000	190	27.9	854
Aug-05-2000	186	27.5	851
Aug-06-2000	202	27.1	812
Aug-07-2000	230	26.6	774
Aug-08-2000	235	26.0	769
Aug-09-2000	206	26.0	822
Aug-10-2000	169	25.5	901
Aug-11-2000	165	25.1	922
Aug-12-2000	172	26.1	905
Aug-13-2000	178	26.2	896
Aug-14-2000	180	26.0	865
Aug-15-2000	172	26.0	837
Aug-16-2000	154	26.0	926
Aug-17-2000	155	26.4	913
Aug-18-2000	137	25.6	966
Aug-19-2000	170	24.7	909
Aug-20-2000	193	24.1	874
Aug-21-2000	211	24.4	839
Aug-22-2000	199	25.0	858
Aug-23-2000	166	24.9	904
Aug-24-2000	169	24.5	942
Aug-25-2000	190	25.0	910
Aug-26-2000	188	25.8	903
Aug-27-2000	162	26.0	914
Aug-28-2000	171	25.6	896
Aug-29-2000	136	23.5	959
Aug-30-2000	109	22.4	1,020
Aug-31-2000	128	22.8	1,030

**Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), August 2000.**

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-01-2000	658	27.5	1,070	3.5
Aug-02-2000	634	27.9	1,160	3.5
Aug-03-2000	605	28.0	1,150	3.2
Aug-04-2000	589	27.1	1,250	4.0
Aug-05-2000	546	26.8	1,310	4.1
Aug-06-2000	576	26.5	1,220	3.4
Aug-07-2000	594	26.1	1,120	3.8
Aug-08-2000	615	25.4	1,020	3.0
Aug-09-2000	634	25.4	1,050	3.1
Aug-10-2000	607	25.1	1,070	3.1
Aug-11-2000	593	24.9	1,160	3.4
Aug-12-2000	591	25.7	1,170	3.6
Aug-13-2000	628	25.6	1,150	3.4
Aug-14-2000	650	25.2	1,020	3.0
Aug-15-2000	614	25.5	1,050	2.6
Aug-16-2000	584	25.6	1,080	2.5
Aug-17-2000	585	25.7	1,110	2.4
Aug-18-2000	541	25.3	1,160	2.5
Aug-19-2000	529	24.4	1,230	2.7
Aug-20-2000	591	23.7	1,250	3.1
Aug-21-2000	628	24.3	1,180	3.9
Aug-22-2000	644	24.8	1,060	2.7
Aug-23-2000	595	25.0	1,050	2.8
Aug-24-2000	593	24.3	1,070	2.8
Aug-25-2000	601	24.6	1,070	2.1
Aug-26-2000	653	24.9	1,150	2.3
Aug-27-2000	623	25.1	1,090	2.0
Aug-28-2000	597	25.2	1,060	2.7
Aug-29-2000	600	23.6	1,050	2.8
Aug-30-2000	595	21.6	1,040	2.3
Aug-31-2000	597	21.9	1,090	3.0



**Table 6a. Weekly water quality monitoring at Station A (inflow to San Luis Drain), taken from grab samples.**  
**Flow data reported by SLDMWA since October 1, 1999.**

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Total Suspended Solids	Selenium (total)	Selenium (dissolved)	Boron
DATA SOURCE	SLDMWA	.	.	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	mg/L	µg/L	µg/L	mg/L
Jun-07-2000	63	.	.	4,170	210	Selenium and boron analyses		
Jun-14-2000	69	.	.	4,330	97	from weekly grab		
Jun-21-2000	64	.	.	4,140	100	discontinued 2/1/00.		
Jun-28-2000	60	.	.	4,580	NA	.	.	.
Jul-05-2000	63	.	.	4,260	NA	.	.	.
Jul-12-2000	64	.	.	4,020	120	.	.	.
Jul-19-2000	58	.	.	4,180	84	.	.	.
Jul-26-2000	57	.	.	3,960	92	.	.	.
Aug-02-2000	63	.	.	3,740	190	.	.	.
Aug-09-2000	60	.	.	3,740	90	.	.	.
Aug-16-2000	51	.	.	3,650	43	.	.	.
Aug-23-2000	61	.	.	3,690	100	.	.	.
Aug-30-2000	57	.	.	4,080	100	.	.	.

**Table 6b. Weekly water quality monitoring at Station A (inflow to San Luis Drain), taken from composite samples.**  
**Flow data reported by SLDMWA since October 1, 1999.**

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	.	Selenium (total)	.	Boron
DATA SOURCE	SLDMWA	.	.	CVRWQCB	.	CVRWQCB	.	CVRWQCB
UNITS	cfs	.	.	µS/cm	.	µg/L	.	mg/L
Jun-06-2000	60	.	.	4,310	.	43.0	.	7.3
Jun-13-2000	71	.	.	4,190	.	44.6	.	7.0
Jun-20-2000	60	.	.	4,440	.	46.0	.	7.2
Jun-27-2000	66	.	.	4,270	.	39.1	.	7.5
Jul-04-2000	61	.	.	4,360	.	42.6	.	7.4
Jul-11-2000	71	.	.	3,920	.	39.9	.	6.7
Jul-18-2000	59	.	.	3,900	.	40.2	.	6.7
Jul-25-2000	62	.	.	4,110	.	46.0	.	6.8
Aug-01-2000	57	.	.	3,940	.	40.3	.	6.8
Aug-08-2000	58	.	.	3,810	.	34.7	.	6.5
Aug-15-2000	52	.	.	3,620	.	26.1	.	6.6
Aug-22-2000	57	.	.	3,480	.	28.6	.	5.9
Aug-29-2000	62	.	.	3,740	.	41.6	.	6.1

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

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	USGS	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	mg/L	µg/L	µg/L	mg/L
Jun-01-2000	51	20.3	8.1	4,300	67	49.8	Selenium	6.5
Jun-08-2000	60	20.5	8.2	4,260	59	43.4	(dissolved)	7.4
Jun-15-2000	66	29.2	8.4	4,000	54	37.5	analyses	6.8
Jun-22-2000	61	27.9	8.1	4,610	64	47.1	discontinued	5.8
Jun-29-2000	56	28.3	8.3	4,180	70	38.8	1/15/2000.	7.5
Jul-06-2000	62	23.3	8.2	4,220	80	36.2	.	7.2
Jul-13-2000	62	23.7	8.0	3,910	30	40.6	.	6.5
Jul-20-2000	57	34.3	7.3	3,810	64	34.9	.	6.7
Jul-27-2000	55	26.7	8.3	4,110	37	48.4	.	6.5
Aug-03-2000	60	27.4	7.6	3,760	52	39.4	.	6.5
Aug-10-2000	57	23.2	8.1	3,760	80	35.4	.	6.5
Aug-17-2000	49	26.6	8.1	3,700	36	27.4	.	6.7
Aug-24-2000	58	23.1	8.0	3,480	52	30.1	.	6.0
Aug-31-2000	55	23.4	7.7	4,010	71	45.5	.	6.5

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

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	calculated **	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	µg/L	mg/L
Jun-01-2000	75	18.4	7.5	1,230	0.8	0.9
Jun-08-2000	24	21.6	8.1	1,800	1.4	1.6
Jun-15-2000	19	30.6	8.5	1,880	1.7	1.7
Jun-22-2000	25	28.7	8.3	1,660	1.7	1.5
Jun-29-2000	6	29.1	8.5	2,370	1.3	2.1
Jul-06-2000	10	27.0	8.8	1,440	1.6	1.4
Jul-13-2000	6	22.6	8.4	1,680	1.0	1.7
Jul-20-2000	6	25.5	8.6	1,670	0.8	1.6
Jul-27-2000	6	28.4	8.7	1,530	1.0	1.5
Aug-03-2000	-5	26.8	8.3	2,580	0.7	2.2
Aug-10-2000	4	19.5	7.0	1,410	1.7	1.7
Aug-17-2000	7	27.4	8.2	1,080	1.0	1.0
Aug-24-2000	5	21.4	8.2	1,450	2.0	1.3
Aug-31-2000	2	23.8	8.4	1,300	<0.4	1.2

++ Calculated flow value. Flow at Station C = flow at Station D - flow at Station B.

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

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
Jun-01-2000	126	19.3	8.0	2,800	23.4	3.6
Jun-08-2000	84	21.0	8.2	3,490	31.5	5.4
Jun-15-2000	85	28.8	8.3	3,670	30.2	5.8
Jun-22-2000	86	29.3	8.3	3,700	34.7	7.7
Jun-29-2000	62	28.5	7.2	3,990	31.6	6.9
Jul-06-2000	72	24.5	7.1	3,790	29.9	6.2
Jul-13-2000	68	24.6	8.3	3,680	34.7	5.8
Jul-20-2000	63	25.9	8.4	3,520	31.7	6.0
Jul-27-2000	61	26.4	8.4	3,690	40.2	5.9
Aug-03-2000	55	28.5	8.1	3,760	42.6	6.3
Aug-10-2000	61	22.9	7.6	3,390	29.8	5.8
Aug-17-2000	56	26.7	8.2	3,180	20.3	5.6
Aug-24-2000	63	23.3	8.3	3,110	25.1	5.2
Aug-31-2000	57	24.1	8.3	3,870	45.1	6.2

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

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
Jun-01-2000	155	19.3	7.6	1,220	0.8	0.5
Jun-08-2000	117	20.3	7.7	1,230	1.4	0.5
Jun-15-2000	195	27.8	7.7	1,100	1.2	0.5
Jun-22-2000	206	26.0	8.1	1,060	1.1	0.5
Jun-29-2000	171	28.0	7.9	1,170	0.7	0.7
Jul-06-2000	252	21.8	7.5	874	1.1	0.4
Jul-13-2000	215	22.9	7.9	976	0.9	0.5
Jul-20-2000	237	22.7	8.0	918	0.9	0.6
Jul-27-2000	179	24.9	8.7	931	1.2	0.5
Aug-03-2000	184	26.2	7.8	916	0.8	0.6
Aug-10-2000	169	22.4	8.1	927	1.1	0.5
Aug-17-2000	155	23.8	7.9	955	0.5	0.4
Aug-24-2000	169	21.9	8.1	1,020	0.7	0.6
Aug-31-2000	128	21.7	8.1	1,060	<0.4	0.5

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

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
Jun-01-2000	.	20.2	7.9	1,410	0.7	0.5
Jun-08-2000	.	21.2	7.7	1,320	1.2	0.5
Jun-15-2000	.	27.2	7.7	1,190	1.0	0.4
Jun-22-2000	.	25.4	7.6	1,040	1.0	0.4
Jun-29-2000	.	28.7	8.5	1,130	0.7	0.6
Jul-06-2000	.	21.5	8.0	824	0.7	0.4
Jul-13-2000	.	23.1	8.1	911	0.7	0.4
Jul-20-2000	.	22.0	6.3	990	0.8	0.6
Jul-27-2000	.	25.4	7.8	1,070	1.0	0.5
Aug-03-2000	.	26.5	7.7	971	0.7	0.6
Aug-10-2000	.	23.3	8.2	910	0.8	0.4
Aug-17-2000	.	23.7	7.9	1,070	0.5	0.4
Aug-24-2000	.	21.8	8.1	978	0.5	0.4
Aug-31-2000	.	21.1	7.7	1,060	<0.4	0.5

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

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
.	.	.	.	.	.	.
.	Data no longer collected regularly for this station. Contact CVRWQCB for details.					

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

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA <sup>††</sup>	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jun-07-2000	15	.	.	585	1.7	0.4
Jun-14-2000	30	.	.	704	1.6	0.7
Jun-21-2000	15	.	.	560	1.7	0.6
Jun-28-2000	10	.	.	533	1.1	0.5
Jul-05-2000	10	.	.	427	1.3	0.3
Jul-12-2000	15	.	.	655	1.0	0.6
Jul-19-2000	5	.	.	466	1.3	0.4
Jul-26-2000	5	.	.	453	1.3	0.3
Aug-02-2000	20	.	.	402	0.8	0.3
Aug-09-2000	10	.	.	385	0.9	0.2
Aug-16-2000	0	.	.	529	1.4	0.7
Aug-23-2000	0	.	.	1,570	0.9	2.8
Aug-30-2000	35	.	.	488	0.5	0.3

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

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA <sup>††</sup>	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jun-07-2000	20	.	.	498	1.6	0.3
Jun-14-2000	10	.	.	480	1.4	0.3
Jun-21-2000	10	.	.	514	1.5	0.3
Jun-28-2000	10	.	.	429	1.2	0.3
Jul-05-2000	25	.	.	424	1.0	0.3
Jul-12-2000	25	.	.	406	0.7	0.2
Jul-19-2000	15	.	.	404	1.1	0.2
Jul-26-2000	15	.	.	408	1.2	0.2
Aug-02-2000	15	.	.	413	0.8	0.3
Aug-09-2000	15	.	.	373	0.9	0.2
Aug-16-2000	15	.	.	392	0.8	0.2
Aug-23-2000	25	.	.	368	0.8	0.2
Aug-30-2000	70	.	.	439	<0.4	0.3

**Table 15. Weekly water quality monitoring at Station L2 (San Luis Canal at splits).**

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA <sup>††</sup>	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jun-07-2000	20	.	.	906	2.0	0.7
Jun-14-2000	10	.	.	1,310	2.6	1.2
Jun-21-2000	10	.	.	1,310	2.7	1.4
Jun-28-2000	10	.	.	1,190	2.3	1.2
Jul-05-2000	10	.	.	1,260	2.2	1.3
Jul-12-2000	10	.	.	1,310	2.2	1.5
Jul-19-2000	10	.	.	1,170	2.3	1.3
Jul-26-2000	10	.	.	1,320	2.6	1.5
Aug-02-2000	10	.	.	1,190	1.8	1.3
Aug-09-2000	10	.	.	1,020	1.8	1.0
Aug-16-2000	10	.	.	1,220	1.8	1.1
Aug-23-2000	10	.	.	1,250	1.7	1.4
Aug-30-2000	10	.	.	1,060	0.8	1.0

**Table 16. Weekly water quality monitoring at Station M2 (Santa Fe Canal at weir).**

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA <sup>††</sup>	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jun-07-2000	5	.	.	982	2.1	0.8
Jun-14-2000	4	.	.	1,050	1.8	0.8
Jun-21-2000	12	.	.	745	1.7	0.5
Jun-28-2000	6	.	.	1,160	2.2	1.5
Jul-05-2000	22	.	.	1,290	2.5	2.1
Jul-12-2000	1	.	.	1,070	1.7	1.4
Jul-19-2000	9	.	.	924	1.8	1.2
Jul-26-2000	5	.	.	1,050	2.0	1.2
Aug-02-2000	46	.	.	1,050	1.8	1.7
Aug-09-2000	34	.	.	1,110	1.9	1.6
Aug-16-2000	20	.	.	903	1.4	1.0
Aug-23-2000	38	.	.	1,200	1.8	1.9
Aug-30-2000	8	.	.	953	0.7	1.0

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

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
Jun-01-2000	820	20.6	7.6	1,270	3.9	0.9
Jun-08-2000	744	21.8	7.8	1,180	3.9	0.9
Jun-15-2000	812	26.4	7.8	1,230	4.1	0.9
Jun-22-2000	681	28.2	7.9	1,170	3.5	0.9
Jun-29-2000	646	25.7	8.1	1,250	3.4	1.1
Jul-06-2000	743	21.3	8.0	1,040	3.4	0.9
Jul-13-2000	667	24.0	9.5	1,120	3.6	0.9
Jul-20-2000	612	25.6	6.9	1,160	3.6	1.0
Jul-27-2000	597	24.4	6.6	1,220	4.9	1.0
Aug-03-2000	605	28.3	8.0	1,140	3.3	1.0
Aug-10-2000	607	22.9	8.0	1,070	3.1	0.9
Aug-17-2000	585	26.8	8.2	1,160	2.2	0.9
Aug-24-2000	593	23.7	8.1	1,050	2.7	0.8
Aug-31-2000	597	20.1	6.8	1,080	3.4	0.9

Table 18. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from September 1999 to August 2000. 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	%	%	%	%	%	%
Sep-1999	95	85	93	53	93	98
Oct-1999	100	98	90	70*	98	100
Nov-1999	98	38*	60*	50*	87	95
Dec-1999	100	73*	73*	70*	100	100
Jan-2000	98	33*	48*	85	83	100
Feb-2000	95	85	65*	75*	95	98
Mar-2000	100	100	100	85	93	100
Apr-2000	95	93	95	98	83	100
May-2000	93	93	98	100	93	100
Jun-2000	90	85	95	95	88	100
Jul-2000	98	100	90	98	100	100
Aug-2000	100	97	88	80	100	100

Table 19. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from September 1999 to August 2000. 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
Sep-1999	0.65	0.49	0.54	0.35	0.59	0.58
Oct-1999	0.70	0.62	0.58	0.51	0.63	0.65
Nov-1999	0.58	0.20*	0.35*	0.29*	0.51	0.52
Dec-1999	0.67	0.47*	0.49	0.50*	0.68	0.61
Jan-2000	0.68	0.23*	0.37	0.59	0.53	0.64
Feb-2000	0.71	0.60	0.54	0.51*	0.68	0.65
Mar-2000	0.66	0.64	0.62	0.62	0.53	0.60
Apr-2000	0.66	0.65	0.69	0.53	0.51	0.82
May-2000	0.27	0.28	0.36	0.35	0.27	0.33
Jun-2000	0.48	0.42	0.56	0.48	0.46	0.54
Jul-2000	0.68	0.60	0.58	0.62	0.62	0.69
Aug-2000	0.50	0.40	0.49	0.44	0.56	0.64

Table 20. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from September 1999 to August 2000. 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	%	%	%	%	%	%
Sep-1999	100	100	100	80	100	80
Oct-1999	100	100	100	100	100	80
Nov-1999	100	100	100	100	90	100
Dec-1999	90	100	100	100	90	90
Jan-2000	100	100	100	100	100	100
Feb-2000	90	90	70	70	80	100
Mar-2000	90	90	90	90	90	100
Apr-2000	80	100	90	90	80	100
May-2000	100	100	100	100	100	90
Jun-2000	80	100	100	90	100	90
Jul-2000	100	100	100	100	90	90
Aug-2000	90	100	90	100	90	90



Table 21. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from September 1999 to August 2000. 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
Sep-1999	29.2	37.7	36.1	28.4	17.9	14.6
Oct-1999	31.7	25.7	28.4	22.2	22.8	16.8
Nov-1999	16.2	11.7	10.1	14.8	5.3 †††	7.3 †††
Dec-1999	34.9	32.0	43.0	37.7	31.2	40.9
Jan-2000	18.9	22.3	23.0	24.9	15.0	14.0
Feb-2000	37.1	29.0	24.5	22.7	22.5	32.1
Mar-2000	10.6	10.6	13.0	10.6	6.2	12.7
Apr-2000	14.5	17.3	11.2	10.5	9.7 †††	11.6
May-2000	13.4	18.5	12.5	9.7	11.4	17.7
Jun-2000	21.5	29.1	35.0	22.1	15.5	16.6
Jul-2000	27.3	36.8	31.4	17.0	8.8	28.6
Aug-2000	20.9	18.2	21.5	26.8	16.3	14.5

Table 22. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from September 1999 to August 2000. 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
Sep-1999	9.8	11.1	10.8	10.2	14.1	23.5
Oct-1999	9.8	10.7	9.0*	11.4	11.8	12.7
Nov-1999	9.9*	12.8	11.4*	12.9	14.3	15.3
Dec-1999	12.0*	22.7	20.9	20.4	18.8	23.4
Jan-2000	2.3*	6.5	7.5	7.3	6.9 ††††	8.2 ††††
Feb-2000	5.8*	9.4	9.8	6.7*	10.0	10.2 ‡
Mar-2000	7.1	9.7	8.0	8.1	8.3 ††††, ‡	11.4 ††††
Apr-2000	18.7	19.9	21.5	22.4	10.0 ‡	12.2
May-2000	16.2	16.3	17.3	16.5	15.2	17.2
Jun-2000	19.7	24.3	21.7	21.4	19.9	11.9
Jul-2000	13.7	16.3	13.5	11.3	12.1	13.3
Aug-2000	19.8	25.1	24.8	33.3	13.4	23.0

**Table 23. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, June 2000 to August 2000.**

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
Jun-12-2000	54	1.3	40	1.2	1.1
Jun-14-2000	43	2.1	28	1.2	0.8
Jun-16-2000	37	2.2	34	1.1	0.8
Jul-10-2000	42	1.7	31	1.0	0.4
Jul-12-2000	35	1.3	33	1.0	0.4
Jul-14-2000	32	0.9	30	0.9	<0.4
Aug-14-2000	24	1.2	26	0.6	<0.4
Aug-16-2000	23	1.0	20	0.6	<0.4
Aug-18-2000	28	0.8	24	1.6	<0.4

**Table 24. Summary of sulfate concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, June 2000 to August 2000.**

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	mg/L	mg/L	mg/L	mg/L	mg/L
Jun-12-2000	1,290	283	1,040	149	31
Jun-14-2000	1,230	310	946	148	50
Jun-16-2000	1,220	397	1,020	167	49
Jul-10-2000	1,350	250	1,100	133	18
Jul-12-2000	1,200	271	1,130	137	34
Jul-14-2000	1,200	325	1,090	142	18
Aug-14-2000	1,130	289	1,110	110	23
Aug-16-2000	1,050	208	923	118	17
Aug-18-2000	1,210	175	1,120	115	15

**Table 25. Summary of total suspended solids concentrations in grab water samples collected from June 2000 to August 2000.**

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	SLDMWA	SLDMWA	SLDMWA	SLDMWA
UNITS	mg/L	mg/L	mg/L	mg/L	mg/L
Jun-12-2000	18	4	21	5	22
Jun-14-2000	15	23	16	3	NA
Jun-16-2000	10	33	22	13	40
Jul-10-2000	17	27	23	31	3
Jul-12-2000	9	43	29	42	5
Jul-14-2000	38	26	41	58	3
Aug-14-2000	17	39	19	33	5
Aug-16-2000	17	22	24	43	5
Aug-18-2000	44	16	61	86	18

**Table 26. Explanations of footnotes and agency abbreviations.**

<b>Footnote</b>	<b>Explanation</b>
CVRWQCB	California Regional Water Quality Control Board, Central Valley Region
SLDMWA	San Luis & Delta-Mendota Water Authority
USBRR	U.S. Bureau of Reclamation
USGS	U.S. Geological Survey
e	Estimated value
.	Not applicable
<	Less than MDL. If needed in calculation, use 1/2 MDL
NA	Not analyzed - operator error, data will not be available in the future
NP	Not Provided. Data may be available in the future.
NT	Not tested
P	Pending, data not available at this time but will be available in the future
(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 Stations D and F cages and light silt accumulation was observed in both the Windmill Station and Station B.
(8)	Moderate silt accumulation was noted in Stations B and F cages and light silt accumulation was observed in Station D.
(9)	No test deployment was done at the Windmill Station due to extreme conditions (stagnant & pH>9.0). At Station B, replicate A was retrieved with no cork and replicate C lost its cork during retrieval. There were no surviving fish for a growth determination for Station F cages.
*	Significantly reduced from Delta Mendota Canal (p<0.05)
†	DMC water failed to meet the survival (>80%) acceptability criteria.
††	Data from records of the Grassland Water District. Data is not subjected to the criteria documented in the Compliance Monitoring Program for the Use and Operation of the Grassland Bypass Project (1996) nor the Quality Assurance Project Plan for the GBP (1997 draft).
†††	DMC water failed to meet the reproduction (>10 neonates/adult) acceptability criteria.
††††	DMC water failed to meet minimum growth (10 <sup>6</sup> cell/mL) acceptability criteria.
‡	Control value exceeds suggested maximum variance (20%) acceptability criteria.
#	New testing laboratory with reporting limit of 0.4 µg/L as of June 1998.