

# GRASSLAND BYPASS PROJECT

## MONTHLY DATA REPORT

**March 2007**

July 3, 2007

### **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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**LIST OF TABLES FOR MONTHLY REPORT****Continuous Monitoring**

1. Continuous water monitoring at Station A (inflow to San Luis Drain), March 2007.
- 2a. Continuous water monitoring at Stations B and B2 (San Luis Drain Terminus), March 2007.
- 2b. Monthly selenium discharges from the terminus of the San Luis Drain into Mud Slough compared to load values.
3. Continuous water monitoring at Station D (Mud Slough North downstream of drainage discharges), March 2007.
4. Continuous water monitoring at Station F (Salt Slough at Highway 165), March 2007.
5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), March 2007.

**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 I2 (Mud Slough backwater downstream of Station D).
11. Weekly water quality monitoring at Station F (Salt Slough at Lander Avenue).
12. Weekly water quality monitoring at Station J (Camp 13 Ditch).
13. Weekly water quality monitoring at Station K (Agatha Canal).
14. Weekly water quality monitoring at Station L2 (San Luis Canal at splits).
15. Weekly water quality monitoring at Station M2 (Santa Fe Canal at weir).
16. Weekly water quality monitoring at Central California Irrigation District Main Canal at Russell Avenue (MER510).
17. Weekly water quality monitoring at Station G (San Joaquin River at Fremont Ford).
18. Weekly water quality monitoring at Station H (San Joaquin River at Hills Ferry).
19. Weekly water quality monitoring at Station N (San Joaquin River at Crow's Landing).

**Monthly Monitoring**

20. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from April 2006 to March 2007.
21. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from April 2006 to March 2007.
22. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from April 2006 to March 2007.
23. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from April 2006 to March 2007.
24. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from April 2006 to March 2007.
25. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, January 2007 to March 2007.
26. Summary of total suspended solids concentrations in grab water samples collected from January 2007 to March 2007.
27. Explanations of footnotes and agency abbreviations.

**Table 1. Continuous water monitoring at Station A (inflow to San Luis Drain), March 2007.**

See Table 27 for explanation of footnotes and agency abbreviations.

<b>PARAMETER</b>	<b>Flow</b>	<b>Specific Conductance</b>
<b>DATA SOURCE</b>	<b>SLDMWA</b>	<b>SLDMWA</b>
<b>UNITS</b>	<b>cfs</b>	<b>µS/cm</b>
Mar-01-2007	27	3,950
Mar-02-2007	29	4,580
Mar-03-2007	35	4,210
Mar-04-2007	30	4,520
Mar-05-2007	32	4,200
Mar-06-2007	26	4,920
Mar-07-2007	25	5,050
Mar-08-2007	25	5,010
Mar-09-2007	23	5,260
Mar-10-2007	22	5,650
Mar-11-2007	24	5,750
Mar-12-2007	25	4,990
Mar-13-2007	35	5,150
Mar-14-2007	38	4,940
Mar-15-2007	34	4,980
Mar-16-2007	35	4,800
Mar-17-2007	35	5,070
Mar-18-2007	32	5,130
Mar-19-2007	28	5,290
Mar-20-2007	22	5,330
Mar-21-2007	22	5,370
Mar-22-2007	21	5,580
Mar-23-2007	20	5,570
Mar-24-2007	25	5,820
Mar-25-2007	27	5,810
Mar-26-2007	34	5,730
Mar-27-2007	31	5,560
Mar-28-2007	32	5,440
Mar-29-2007	29	5,400
Mar-30-2007	26	5,440
Mar-31-2007	25	5,370
Mean	28	5,160

**Table 2a. Continuous water monitoring at Stations B and B2 (San Luis Drain Terminus), March 2007.**

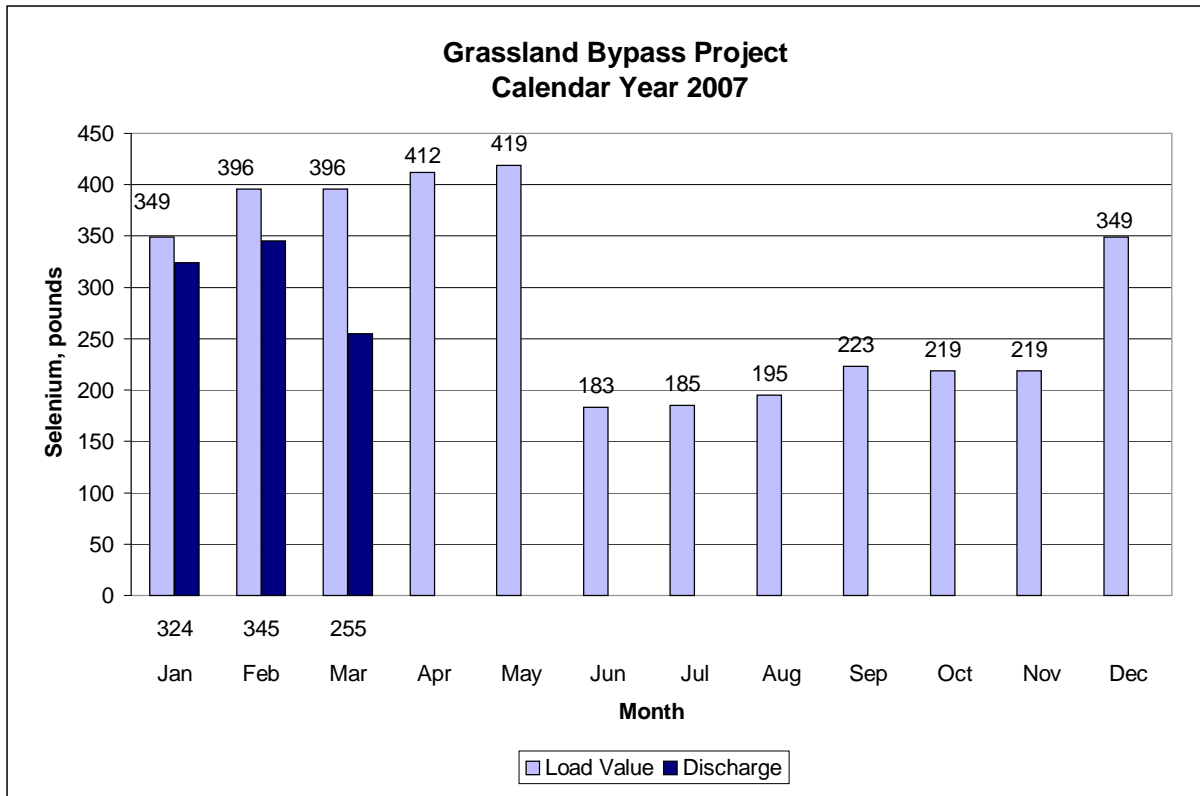
See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	San Luis Drain Outlet Flow	Temperature	Boron	Specific Conductance	Selenium (total)	Selenium (total) Load
DATA SOURCE	SLDMWA*	SLDMWA	CVRWQCB	SLDMWA	CVRWQCB	Computed
UNITS	cfs	°C	mg/L	µS/cm	µg/L	lbs
Mar-01-2007	32	12.7	4.8	3,210	20.5	3.5
Mar-02-2007	32	13.2	5.2	3,210	19.8	3.4
Mar-03-2007	34	14.2	4.9	3,190	19.9	3.7
Mar-04-2007	38	15.4	5.4	3,660	28.5	5.9
Mar-05-2007	35	16.6	5.5	3,720	33.0	6.3
Mar-06-2007	36	17.8	6.0	4,160	43.2	8.5
Mar-07-2007	32	18.8	5.3	3,840	40.0	6.9
Mar-08-2007	30	18.5	6.0	4,140	43.0	6.9
Mar-09-2007	30	17.9	6.2	3,970	37.6	6.0
Mar-10-2007	28	17.5	6.8	4,280	39.2	5.8
Mar-11-2007	27	18.2	7.4	4,560	39.3	5.7
Mar-12-2007	27	19.1	7.4	4,550	39.4	5.7
Mar-13-2007	30	20.3	7.6	4,580	39.2	6.3
Mar-14-2007	37	21.2	8.0	4,880	45.6	9.1
Mar-15-2007	40	21.3	8.2	4,920	45.3	9.8
Mar-16-2007	37	21.6	8.1	4,780	52.8	10.6
Mar-17-2007	38	22.1	7.9	4,680	64.2	13.0
Mar-18-2007	36	21.8	7.4	4,620	65.1	12.8
Mar-19-2007	35	21.3	7.3	4,630	64.6	12.2
Mar-20-2007	31	20.1	7.1	4,520	63.8	10.7
Mar-21-2007	25	18.2	7.5	4,600	64.3	8.5
Mar-22-2007	24	17.7	7.2	4,750	69.8	9.1
Mar-23-2007	23	18.5	7.4	4,770	65.2	8.1
Mar-24-2007	22	19.8	8.1	4,930	61.5	7.3
Mar-25-2007	24	19.8	8.3	4,940	46.5	6.1
Mar-26-2007	28	19.9	8.1	4,990	49.8	7.6
Mar-27-2007	33	18.3	8.2	5,130	51.8	9.1
Mar-28-2007	31	16.0	8.8	5,250	57.6	9.7
Mar-29-2007	34	16.2	8.9	5,520	64.2	11.8
Mar-30-2007	31	17.8	9.6	5,420	80.9	13.5
Mar-31-2007	27	19.0	9.1	5,210	77.6	11.3
Mean	31	18.4	7.2	4,500	51.7	8.2
<b>Total Acre-feet</b>	<b>1,920</b>					
<b>Total (lbs)</b>						<b>255</b>

<b>Load Limitation for March 2007 (lbs)</b>	<b>396</b>
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♦To improve the accuracy of flow measurements, Reclamation and the San Luis & Delta-Mendota Water Authority, with technical assistance from the USGS, are measuring flow at the San Luis Drain Outlet. The Outlet is located two miles from Station B. Discharge is measured as stage over a sharp-crested weir, identical to Station A. This is a simpler and more accurate method that will not be altered by sediment accumulation. Water quality data are still collected at the old Site B.

Figure 2b. Monthly selenium discharges from the terminus of the San Luis Drain into Mud Slough compared to load values.



**Table 3. Continuous water monitoring at Station D (Mud Slough North downstream of drainage discharges), March 2007.**

See Table 27 for explanation of footnotes and agency abbreviations.

<b>PARAMETER</b>	<b>Flow</b>	<b>Temperature</b>	<b>Specific Conductance</b>
<b>DATA SOURCE</b>	<b>usgs</b>	<b>usgs</b>	<b>usgs</b>
<b>UNITS</b>	<b>cfs</b>	<b>°C</b>	<b>µS/cm</b>
Mar-01-2007	139	12.1	2,460
Mar-02-2007	140	12.5	2,470
Mar-03-2007	143	13.7	2,480
Mar-04-2007	148	15.1	2,560
Mar-05-2007	157	16.6	2,430
Mar-06-2007	181	17.5	2,370
Mar-07-2007	170	18.4	2,370
Mar-08-2007	168	17.5	2,440
Mar-09-2007	168	16.6	2,480
Mar-10-2007	181	16.3	2,330
Mar-11-2007	190	17.3	2,370
Mar-12-2007	188	18.7	2,400
Mar-13-2007	187	19.9	2,460
Mar-14-2007	206	20.8	2,510
Mar-15-2007	193	20.1	2,710
Mar-16-2007	177	20.4	2,720
Mar-17-2007	160	21.1	2,850
Mar-18-2007	138	20.5	2,970
Mar-19-2007	137	19.9	3,000
Mar-20-2007	122	18.4	3,000
Mar-21-2007	113	16.5	2,980
Mar-22-2007	94	16.4	3,230
Mar-23-2007	80	17.7	3,360
Mar-24-2007	83	19.2	3,380
Mar-25-2007	88	18.8	3,290
Mar-26-2007	85	18.7	3,420
Mar-27-2007	84	16.8	3,650
Mar-28-2007	68	14.6	4,080
Mar-29-2007	71	15.3	4,050
Mar-30-2007	80	17.5	3,540
Mar-31-2007	67	18.8	3,850
Mean	136	17.5	2,910

**Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), March 2007.**

See Table 27 for explanation of footnotes and agency abbreviations.

<b>PARAMETER</b>	<b>Flow</b>	<b>Temperature</b>	<b>Specific Conductance</b>
<b>DATA SOURCE</b>	<b>usgs</b>	<b>usgs</b>	<b>usgs</b>
<b>UNITS</b>	<b>cfs</b>	<b>°C</b>	<b>µS/cm</b>
Mar-01-2007	269	11.9	1,390
Mar-02-2007	245	12.4	1,440
Mar-03-2007	229	13.4	1,400
Mar-04-2007	236	14.5	1,330
Mar-05-2007	245	15.9	1,300
Mar-06-2007	251	16.8	1,300
Mar-07-2007	259	17.6	1,310
Mar-08-2007	253	16.9	1,320
Mar-09-2007	244	16.2	1,370
Mar-10-2007	255	15.9	1,390
Mar-11-2007	260	16.5	1,390
Mar-12-2007	254	17.6	1,410
Mar-13-2007	262	18.9	1,430
Mar-14-2007	265	19.7	1,460
Mar-15-2007	265	19.6	1,480
Mar-16-2007	278	19.7	1,520
Mar-17-2007	293	20.1	1,560
Mar-18-2007	297	19.8	1,570
Mar-19-2007	282	19.0	1,580
Mar-20-2007	267	17.8	1,590
Mar-21-2007	284	16.0	1,580
Mar-22-2007	274	16.0	1,570
Mar-23-2007	244	17.1	1,630
Mar-24-2007	206	18.4	1,680
Mar-25-2007	170	18.3	1,710
Mar-26-2007	155	18.1	1,740
Mar-27-2007	149	16.7	1,770
Mar-28-2007	157	14.8	1,780
Mar-29-2007	151	15.2	1,740
Mar-30-2007	148	16.9	1,660
Mar-31-2007	143	18.5	1,620
Mean	235	17.0	1,520



**Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), March 2007.**

See Table 27 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
Mar-01-2007	1,190	11.8	1,210	1.3
Mar-02-2007	1,410	11.8	920	1.0
Mar-03-2007	1,390	12.6	903	0.8
Mar-04-2007	1,280	13.7	1,050	0.8
Mar-05-2007	1,190	15.1	1,120	1.2
Mar-06-2007	1,110	16.3	1,240	1.4
Mar-07-2007	1,080	17.2	1,300	1.6
Mar-08-2007	1,030	17.3	1,350	1.8
Mar-09-2007	982	16.7	1,370	1.6
Mar-10-2007	960	16.2	1,520	1.9
Mar-11-2007	1,010	16.6	1,490	1.7
Mar-12-2007	1,040	17.6	1,480	1.5
Mar-13-2007	1,000	18.7	1,480	1.5
Mar-14-2007	985	19.6	1,540	1.7
Mar-15-2007	1,010	19.5	1,590	1.8
Mar-16-2007	1,030	19.6	1,640	2.3
Mar-17-2007	1,000	20.1	1,600	2.1
Mar-18-2007	993	20.1	1,660	2.6
Mar-19-2007	1,010	19.7	1,620	2.9
Mar-20-2007	995	18.9	1,620	2.7
Mar-21-2007	976	17.7	1,630	2.8
Mar-22-2007	1,010	17.0	1,520	2.3
Mar-23-2007	1,010	17.5	1,470	2.1
Mar-24-2007	959	18.6	1,520	2.2
Mar-25-2007	889	19.1	1,580	2.2
Mar-26-2007	876	18.6	1,530	2.3
Mar-27-2007	885	17.6	1,520	2.0
Mar-28-2007	871	15.8	1,510	2.3
Mar-29-2007	812	15.8	1,580	2.5
Mar-30-2007	774	17.2	1,630	2.9
Mar-31-2007	769	18.5	1,600	3.7
Mean	1,020	17.2	1,440	2.0

Table 6a. Weekly water quality monitoring at Station A (inflow to San Luis Drain), taken from grab samples.

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Total Suspended Solids	.	.	.
DATA SOURCE	SLDMWA	.	.	CVRWQCB	CVRWQCB	.	.	.
UNITS	cfs	.	.	µS/cm	mg/L	.	.	.
Jan-03-2007	16	.	.	4,480	32	.	.	.
Jan-10-2007	19	.	.	4,660	120	.	.	.
Jan-17-2007	30	.	.	3,960	120	.	.	.
Jan-24-2007	36	.	.	4,370	140	.	.	.
Jan-31-2007	39	.	.	4,290	170	.	.	.
Feb-07-2007	41	.	.	3,880	210	.	.	.
Feb-14-2007	38	.	.	4,330	210	.	.	.
Feb-21-2007	37	.	.	3,860	210	.	.	.
Feb-28-2007	26	.	.	3,720	110	.	.	.
Mar-07-2007	25	.	.	4,890	135	.	.	.
Mar-14-2007	38	.	.	4,690	176	.	.	.
Mar-21-2007	22	.	.	5,040	123	.	.	.
Mar-28-2007	32	.	.	5,160	199	.	.	.

Table 6b. Weekly water quality monitoring at Station A (inflow to San Luis Drain), taken from composite samples.

See Table 27 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
Jan-09-2007	18	.	.	4,720	.	87.2	.	7.0
Jan-16-2007	27	.	.	NA	.	73.8	.	6.2
Jan-23-2007	35	.	.	4,090	.	66.4	.	5.4
Jan-30-2007	38	.	.	4,150	.	62.8	.	5.6
Feb-06-2007	39	.	.	4,050	.	62.2	.	5.6
Feb-13-2007	39	.	.	4,230	.	61.2	.	6.0
Feb-20-2007	38	.	.	4,530	.	56.8	.	6.8
Feb-27-2007	29	.	.	3,460	.	31.6	.	5.1
Mar-06-2007	26	.	.	4,230	.	42.8	.	6.0
Mar-13-2007	35	.	.	4,920	.	53.4	.	P
Mar-20-2007	22	.	.	4,920	.	60.0	.	7.8
Mar-27-2007	31	.	.	5,430	.	66.4	.	8.0

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

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Total Suspended Solids	Selenium (total)	Boron
DATA SOURCE	USGS	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C	.	µS/cm	mg/L	µg/L	mg/L
Jan-04-2007	22	8.8	7.8	3,640	39	56.6	4.9
Jan-11-2007	24	7.6	8.0	4,380	37	70.3	6.4
Jan-18-2007	35	5.1	8.1	4,590	20	60.4	6.2
Jan-25-2007	42	7.9	7.7	3,950	52	59.9	5.1
Feb-01-2007	44	10.7	7.3	4,150	47	65.0	5.6
Feb-08-2007	47	11.7	7.6	3,930	43	54.2	5.2
Feb-15-2007	42	12.9	8.0	4,390	36	58.6	6.0
Feb-22-2007	43	12.4	7.8	4,260	41	47.2	5.9
Mar-01-2007	32	11.3	8.0	3,170	38	20.4	4.5
Mar-08-2007	30	16.8	8.4	4,250	47	42.7	5.7
Mar-15-2007	40	19.0	8.2	5,290	55	45.6	8.2
Mar-22-2007	24	15.7	8.6	4,830	35	69.2	7.5
Mar-29-2007	34	14.2	8.5	5,510	60	63.4	8.0

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

See Table 27 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
Jan-04-2007	155	9.0	7.9	1,810	.	<0.4	1.1
Jan-11-2007	145	7.2	8.0	1,490	.	<0.4	1.1
Jan-18-2007	115	5.1	8.1	1,620	.	<0.4	1.2
Jan-25-2007	114	7.8	7.9	1,670	.	0.5	1.2
Feb-01-2007	93	9.9	7.6	1,930	.	<0.4	1.5
Feb-08-2007	115	11.6	7.8	1,840	.	0.4	1.5
Feb-15-2007	124	12.0	7.9	1,970	.	0.5	1.6
Feb-22-2007	93	12.2	7.9	2,220	.	<0.4	1.7
Mar-01-2007	107	10.3	7.9	2,190	.	0.5	1.8
Mar-08-2007	138	16.0	7.9	2,010	.	0.5	1.6
Mar-15-2007	153	18.2	7.9	2,110	.	0.7	1.7
Mar-22-2007	70	15.4	8.2	2,500	.	0.6	1.9
Mar-29-2007	37	12.6	8.5	2,840	.	0.7	2.5

\*\* 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 27 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
Jan-04-2007	177	8.9	7.9	1,810	7.8	1.8
Jan-11-2007	169	7.2	8.0	1,940	9.2	1.9
Jan-18-2007	150	5.1	8.0	2,360	14.6	2.5
Jan-25-2007	156	7.8	7.8	2,320	14.2	2.3
Feb-01-2007	137	10.1	7.5	2,660	19.4	2.8
Feb-08-2007	162	11.7	7.7	2,390	14.4	2.5
Feb-15-2007	166	12.2	7.8	2,650	14.0	2.7
Feb-22-2007	136	12.3	7.9	2,890	13.3	3.0
Mar-01-2007	139	10.4	7.9	2,490	4.6	2.6
Mar-08-2007	168	16.1	8.0	2,400	6.5	2.4
Mar-15-2007	193	18.5	7.9	2,720	9.1	2.8
Mar-22-2007	94	15.3	8.2	3,110	15.6	3.1
Mar-29-2007	71	13.0	8.5	4,100	25.8	4.8

Table 10. Weekly water quality monitoring at Station I2 (Mud Slough backwater downstream of Station D).

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER		pH	Specific Conductance	Turbidity	Selenium	Boron
DATA SOURCE		USBR	USBR	USBR	USBR	USBR
UNITS		.	µS/cm	NTU	µg/L	mg/L
Jan-09-2007	.	7.8	1,960	19	8.2	2.0
Jan-16-2007	.	8.3	2,090	17	12.0	2.2
Jan-23-2007	.	NA	2,330	27	14.3	2.6
Jan-30-2007	.	7.9	2,500	21	15.6	2.7
Feb-05-2007	.	NA	2,640	30	17.0	3.1
Feb-14-2007	.	8.0	2,680	NA	12.2	3.0
Feb-20-2007	.	7.6	3,310	24	12.2	3.4 <sup>L</sup>
Feb-28-2007	.	7.9	2,680	29	6.3	2.7
Mar-06-2007	.	7.9	2,490	36	7.5	2.7 <sup>L</sup>
Mar-13-2007	.	7.9	2,680	148	5.1	2.9
Mar-19-2007	.	7.9	3,170	131	14.2	3.8
Mar-27-2007	.	8.4	3,630	76	15.7	4.8

Table 11. Weekly water quality monitoring at Station F (Salt Slough at Lander Avenue).

See Table 27 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
Jan-04-2007	176	9.0	7.7	1,420	<0.4	1.0
Jan-11-2007	183	7.4	7.8	1,450	0.4	0.9
Jan-18-2007	195	5.2	7.8	1,380	0.6	0.9
Jan-25-2007	203	7.2	7.4	1,420	0.5	0.9
Feb-01-2007	217	10.1	7.0	1,450	0.6	0.9
Feb-08-2007	214	11.2	7.7	1,450	0.7	0.7
Feb-15-2007	191	12.4	7.5	1,730	0.7	0.9
Feb-22-2007	222	12.4	7.6	1,450	0.8	0.6
Mar-01-2007	269	10.9	7.7	1,470	0.7	0.6
Mar-08-2007	253	15.9	7.7	1,490	0.7	0.6
Mar-15-2007	265	18.2	7.7	1,560	0.9	0.9
Mar-22-2007	274	14.7	7.7	1,680	0.8	1.0
Mar-29-2007	151	13.1	7.8	1,830	0.9	1.0

Table 12. Weekly water quality monitoring at Station J (Camp 13 Ditch).

See Table 27 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
Jan-10-2007	25	.	.	700	1.3	0.4
Jan-17-2007	25	.	.	690	0.8	0.4
Jan-24-2007	25	.	.	606	1.0	0.3
Jan-31-2007	0	.	.	649	1.7	0.4
Feb-07-2007	0	.	.	784	1.7	0.5
Feb-14-2007	0	.	.	891	2.7	0.5
Feb-21-2007	0	.	.	1,630	0.9	1.8
Feb-28-2007	0	.	.	644	0.9	0.4
Mar-07-2007	10	.	.	866	1.7	0.7
Mar-14-2007	10	.	.	672	1.2	P
Mar-21-2007	NA	.	.	1,560	0.7	1.4
Mar-28-2007	0	.	.	1,890	2.1	2.6

Table 13. Weekly water quality monitoring at Station K (Agatha Canal).

See Table 27 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
Jan-03-2007	50	.	.	600	0.7	0.3
Jan-10-2007	50	.	.	654	0.7	0.3
Jan-17-2007	50	.	.	663	0.8	0.3
Jan-24-2007	50	.	.	596	0.7	0.2
Jan-31-2007	0	.	.	634	1.3	0.3
Feb-07-2007	20	.	.	642	1.3	0.3
Feb-14-2007	20	.	.	NA	2.1	0.5
Feb-21-2007	20	.	.	913	1.8	0.7
Feb-28-2007	20	.	.	682	1.0	0.4
Mar-07-2007	0	.	.	825	1.5	0.5
Mar-14-2007	0	.	.	1,890	0.6	P
Mar-21-2007	NA	.	.	1,720	1.1	2.5
Mar-28-2007	20	.	.	1,100	1.5	1.7

Table 14. Weekly water quality monitoring at Station L2 (San Luis Canal at splits).

See Table 27 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
Jan-03-2007	0	.	.	576	0.8	0.3
Jan-10-2007	25	.	.	604	0.6	0.3
Jan-17-2007	25	.	.	674	0.9	0.3
Jan-24-2007	25	.	.	717	0.9	0.4
Jan-31-2007	0	.	.	646	1.3	0.5
Feb-07-2007	NA	.	.	1,220	1.3	1.1
Feb-14-2007	NA	.	.	1,340	2.1	1.2
Feb-21-2007	NA	.	.	1,080	2.3	0.7
Feb-28-2007	NA	.	.	1,080	2.3	0.7
Mar-07-2007	20	.	.	828	1.8	0.5
Mar-14-2007	20	.	.	948	1.7	P
Mar-21-2007	NA	.	.	1,710	1.5	1.5
Mar-28-2007	0	.	.	1,950	1.6	2.0

Table 15. Weekly water quality monitoring at Station M2 (Santa Fe Canal at weir).

See Table 27 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
Jan-03-2007	NA	.	.	1,040	0.5	1.0
Jan-10-2007	NA	.	.	1,100	0.5	1.0
Jan-17-2007	NA	.	.	1,120	0.5	1.0
Jan-24-2007	NA	.	.	1,210	0.6	1.0
Jan-31-2007	NA	.	.	1,220	1.0	1.1
Feb-07-2007	NA	.	.	1,310	1.0	1.3
Feb-14-2007	NA	.	.	1,680	1.3	1.6
Feb-21-2007	NA	.	.	1,760	1.2	1.7
Feb-28-2007	NA	.	.	1,660	1.2	1.7
Mar-07-2007	NA	.	.	1,520	0.9	1.5
Mar-14-2007	NA	.	.	1,840	1.0	P
Mar-21-2007	NA	.	.	2,160	1.0	2.4
Mar-28-2007	NA	.	.	2,270	1.2	3.1

Table 16. Weekly water quality monitoring at Central California Irrigation District Main Canal at Russell Avenue (MER510).

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	.	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	.	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	.	.	.	µS/cm	µg/L	mg/L
Jan-03-2007	.	.	.	570	0.6	0.3
Jan-10-2007	.	.	.	609	0.5	0.2
Jan-17-2007	.	.	.	628	0.6	0.2
Jan-24-2007	.	.	.	673	1.1	0.3
Jan-31-2007	.	.	.	562	1.4	0.2
Feb-07-2007	.	.	.	619	1.4	0.3
Feb-14-2007	.	.	.	NA	2.4	0.3
Feb-21-2007	.	.	.	646	1.3	0.3
Feb-28-2007	.	.	.	548	1.0	0.3
Mar-07-2007	.	.	.	543	1.2	0.2
Mar-14-2007	.	.	.	454	1.3	P
Mar-21-2007	.	.	.	877	4.4	0.4
Mar-28-2007	.	.	.	641	1.7	0.3

Table 17. Weekly water quality monitoring at Station G (San Joaquin River at Fremont Ford).

See Table 27 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
Jan-04-2007	225	8.9	7.8	1,480	0.4	0.9
Jan-11-2007	227	7.2	7.7	1,550	<0.4	0.9
Jan-18-2007	244	5.0	7.8	1,540	0.4	0.8
Jan-25-2007	250	7.2	7.5	1,560	<0.4	0.8
Feb-01-2007	263	9.7	7.4	1,500	0.5	0.8
Feb-08-2007	266	11.1	7.4	1,540	0.7	0.7
Feb-15-2007	535	12.1	7.4	931	0.5	0.3
Feb-22-2007	322	12.4	7.8	1,430	0.7	0.5
Mar-01-2007	715	11.0	7.5	906	0.4	0.3
Mar-08-2007	405	16.3	7.9	1,400	0.6	0.5
Mar-15-2007	389	17.9	7.9	1,610	0.8	0.7
Mar-22-2007	426	16.1	7.9	1,630	0.7	0.8
Mar-29-2007	268	14.3	8.0	1,860	0.7	0.8

Table 18. Weekly water quality monitoring at Station H (San Joaquin River at Hills Ferry).

(Collected data intended for use with biological monitoring.)

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	.	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	.	.	.	SLDMWA	SLDMWA	SLDMWA
UNITS	.	.	.	µS/cm	µg/L	mg/L
Jan-04-2007	.	.	.	NA	<0.4	0.2
Jan-09-2007	.	.	.	NA	3.3	1.3
Jan-16-2007	.	.	.	NA	3.9	1.3
Jan-24-2007	.	.	.	NA	5.1	1.3
Jan-31-2007	.	.	.	NA	5.0	1.4
Feb-06-2007	.	.	.	NA	5.3	1.3
Feb-13-2007	.	.	.	NA	4.4	1.3
Feb-20-2007	.	.	.	NA	<0.4	0.2
Mar-06-2007	.	.	.	NA	1.7	1.1
Mar-13-2007	.	.	.	NA	2.4	1.5
Mar-20-2007	.	.	.	NA	3.4	1.8
Mar-27-2007	.	.	.	NA	<0.4	0.2



Table 19. Weekly water quality monitoring at Station N (San Joaquin River at Crow's Landing).

See Table 27 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
Jan-04-2007	880	9.3	7.9	1,230	2.0	0.9
Jan-11-2007	875	7.7	7.8	1,250	2.1	0.8
Jan-18-2007	860	5.9	8.0	1,290	2.6	0.9
Jan-25-2007	800	8.0	8.0	1,380	3.4	0.9
Feb-01-2007	791	10.5	7.6	1,470	3.8	1.0
Feb-08-2007	857	11.6	7.8	1,410	3.2	1.0
Feb-15-2007	1,200	12.6	7.8	1,100	2.4	0.6
Feb-22-2007	863	13.3	7.8	1,460	2.7	0.9
Mar-01-2007	1,190	11.2	7.8	1,150	1.3	0.6
Mar-08-2007	1,030	16.8	7.9	1,410	1.7	0.8
Mar-15-2007	1,010	18.8	8.0	1,630	1.9	1.1
Mar-22-2007	1,010	16.6	8.1	1,490	2.0	0.9
Mar-29-2007	812	14.9	8.1	1,570	2.5	1.0

**Table 20. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from April 2006 to March 2007. Each value is the mean of 4 replicates with 10 fish in each replicate.**

See Table 27 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	%	%	%	%	%	%
Apr-2006	90	95	98	100	95	100
May-2006	95	100	98	100	88	100
Jun-2006	93	100	98	98	98	100
Jul-2006	83	98	100	100	95	95
Aug-2006	98	98	95	98	98	90
Sep-2006	98	95	98	98	100	98
Oct-2006	95	85	85	90	98	100
Nov-2007	95	98	85	100	100	98
Dec-2007	98	100	85*	93	98	98
Jan-2007	100	100	90	93	98	100
Feb-2007	98	90	95	88	98	100
Mar-2007	98	80*	95	93	98	98

**Table 21. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from April 2006 to March 2007. Each value is the mean of 4 replicates with 10 fish in each replicate.**

See Table 27 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
Apr-2006	0.31	0.38	0.36	0.36	0.29	0.28
May-2006	0.38	0.43	0.39	0.58	0.34	0.33
Jun-2006	0.45*	0.41*	0.46*	0.49	0.54	0.41
Jul-2006	0.34	0.36	0.38	0.56	0.36	0.35
Aug-2006	0.36	0.33	0.38	0.37	0.39	0.33
Sep-2006	0.31	0.39	0.41	0.35	0.33	0.34
Oct-2006	0.39	0.36	0.36	0.35	0.40	0.40
Nov-2007	0.30	0.28*	0.30	0.33	0.33	0.32
Dec-2007	0.35	0.40	0.41	0.45	0.32	0.31
Jan-2007	0.30	0.35	0.37	0.34	0.31	0.31
Feb-2007	0.45	0.41	0.43	0.33	0.37	0.38
Mar-2007	0.36	0.26*	0.36	0.33	0.32	0.31

**Table 22. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from April 2006 to March 2007. Each value is the mean of 10 replicates with 1 animal in each replicate.**

See Table 27 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	%	%	%	%	%	%
Apr-2006	80	90	100	90	100	100
May-2006	100	90	100	100	100	100
Jun-2006	90	90	100	90	90	80
Jul-2006	80	100	80	90	80	100
Aug-2006	100	100	90	100	100	100
Sep-2006	100	80	100	100	100	90
Oct-2006	70	80	100	80	90	80
Nov-2007	90	100	100	90	90	100
Dec-2007	90	70	100	90	100	90
Jan-2007	90	90	80	90	90	80
Feb-2007	100	80	90	90	100	90
Mar-2007	100	80	90	100	80	100

**Table 23. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from April 2006 to March 2007. Each value is the mean of 10 replicates with 1 animal in each replicate.**

See Table 27 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
Apr-2006	43.6	42.7	43.5	39.9	32.7	37.4
May-2006	49.2	28.1	27.3	26.4	22.9	18.2
Jun-2006	26.2	25.9	29.9	26.7	20.9	19.1
Jul-2006	35.8	42.3	42.1	35.4	32.7	29.3
Aug-2006	34.7	33.3	23.9*	31.4	36.2	30.8
Sep-2006	25.9	20.1	23.8	26.9	27.6	23.6
Oct-2006	25.9	27.4	30.1	26.3	26.9	19.6
Nov-2007	36.6	49.6	47.0	47.9	38.3	46.2
Dec-2007	28.4	22.5	29.6	31.5	27.8	22.3
Jan-2007	20.5	27.3	23.2	26.0	28.5	21.4
Feb-2007	31.7	32.9	39.4	31.6	28.6	30.5
Mar-2007	35.2	27.1	32.9	28.2*	36.8	30.2

**Table 24. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from April 2006 to March 2007. Each value is the mean of 4 replicates.**

See Table 27 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
Apr-2006	9.9	21.5	18.8	18.6	12.7	19.7
May-2006	20.6	11.5*	15.9	13.6	15.4	16.4
Jun-2006	12.0	9.7	10.0	10.2	11.3	16.0
Jul-2006	19.0	14.4	22.5	17.9	9.5	14.0
Aug-2006	16.4	17.8	17.3	21.4	16.8	13.5
Sep-2006	4.1*	20.7	21.7	22.6	17.7	12.9
Oct-2006	21.4	27.8	30.4	23.4	12.5	20.3
Nov-2007	17.6	26.2	23.3	24.7	17.7	17.5
Dec-2007	13.4	13.9	12.8	5.4*	7.5	17.2
Jan-2007	8.9	20.3	18.5	21.0	11.4	16.9
Feb-2007	7.9*	22.9	17.9	31.8	13.4	15.7
Mar-2007	12.0	11.0	8.8*	9.2*	12.4	14.3

**Table 25. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, January 2007 to March 2007.**

See Table 27 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
Jan-15-2007	63	0.4	9.9	0.5	0.7
Jan-17-2007	72	<0.4	14	0.4	<0.4
Jan-19-2007	50	0.4	12	0.5	<0.4
Jan-22-2007	58	<0.4	15	0.6	<0.4
Feb-12-2007	58	0.7	13	0.9	1.4**
Feb-14-2007	54	0.7	13	0.7	1.2**
Feb-16-2007	57	0.6	12	0.8	1.2**
Feb-20-2007	46	0.5	14	0.9	<0.4
Mar-12-2007	39	0.6	4.8	0.7	0.4
Mar-14-2007	43	0.5	6.4	0.7	0.5
Mar-16-2007	47	0.6	7.2	0.8	0.6

**Table 26. Summary of total suspended solids concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, January 2007 to March 2007.**

See Table 27 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
Jan-15-2007	17	37	16	23	9
Jan-17-2007	23	58	24	22	NA
Jan-19-2007	67	35	41	26	14
Jan-22-2007	37	22	30	27	13
Feb-12-2007	38	54	58	81	11
Feb-14-2007	43	52	39	66	23
Feb-16-2007	74	89	65	161	20
Feb-20-2007	24	41	35	86	8
Mar-12-2007	39	71	71	103	22
Mar-14-2007	36	80	72	79	23
Mar-16-2007	80	93	79	91	44

Table 27. 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
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
*	Significantly reduced from Delta Mendota Canal ( $p < 0.05$ )
**	Sample re-analyzed and result confirmed.
L	Result may be biased low. Sample was not preserved in the field
†	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.
†††	DMC water failed to meet the reproduction (>10 neonates/adult) acceptability criteria.
††††	DMC water failed to meet minimum growth ( $10^6$ cell/mL) acceptability criteria.
‡	Control value exceeds suggested maximum variance (20%) acceptability criteria.
‡‡	Fungal growth observed on test organisms.
‡‡‡	Failed cell density requirement of $1E6$ cells.
#	New testing laboratory with reporting limit of 0.4 $\mu\text{g/L}$ as of June 1998.
❖	Based on definitive bioassay, NOEC is 50 percent
D	Sample was dechlorinated