

GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

August 2010

January 20, 2011

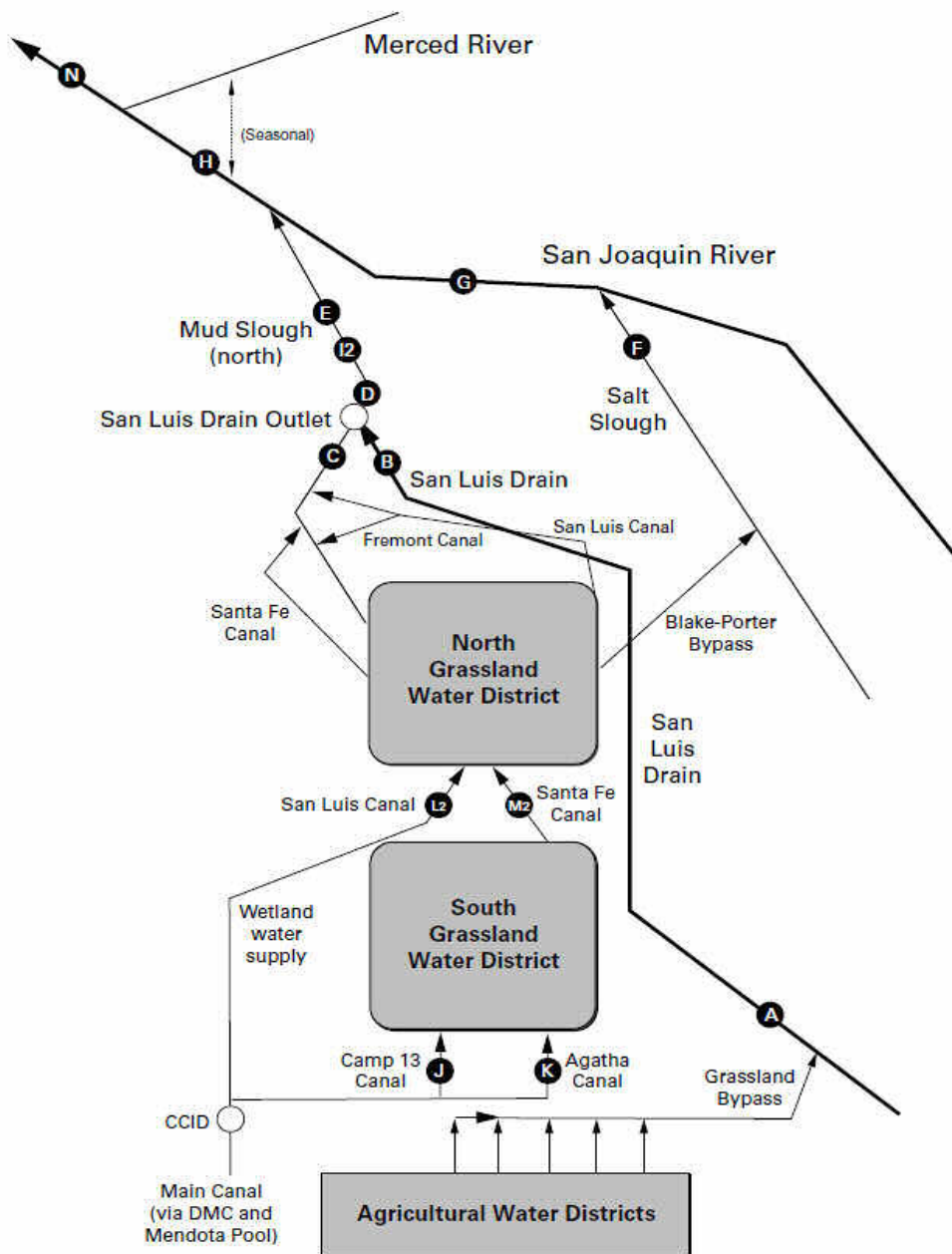
Preliminary Results

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





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Monthly Monitoring

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Table 1. Continuous water monitoring at Station A (inflow to San Luis Drain), August 2010.

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Specific Conductance
DATA SOURCE	SLDMWA	SLDMWA
UNITS	cfs	µS/cm
Aug-01-2010	16	5,410
Aug-02-2010	18	5,220
Aug-03-2010	18	5,350
Aug-04-2010	16	5,070
Aug-05-2010	16	5,050
Aug-06-2010	17	5,420
Aug-07-2010	22	4,580
Aug-08-2010	23	4,120
Aug-09-2010	21	4,210
Aug-10-2010	18	4,380
Aug-11-2010	18	4,260
Aug-12-2010	19	4,520
Aug-13-2010	19	5,240
Aug-14-2010	18	5,470
Aug-15-2010	19	4,990
Aug-16-2010	17	4,830
Aug-17-2010	17	5,220
Aug-18-2010	17	5,300
Aug-19-2010	19	5,150
Aug-20-2010	18	4,880
Aug-21-2010	20	4,730
Aug-22-2010	17	5,190
Aug-23-2010	16	5,390
Aug-24-2010	19	5,560
Aug-25-2010	18	4,970
Aug-26-2010	18	4,740
Aug-27-2010	19	4,670
Aug-28-2010	19	4,680
Aug-29-2010	20	4,430
Aug-30-2010	21	4,880
Aug-31-2010	15	5,210
Mean	18	4,940

Table 2a. Continuous water monitoring at Stations B and B2 (San Luis Drain Terminus), August 2010.

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
Aug-01-2010	12	26.9	12.0	5,840	50.3	3.3
Aug-02-2010	13	26.9	12.0	6,130	47.0	3.2
Aug-03-2010	15	27.2	12.0	6,090	40.5	3.2
Aug-04-2010	15	27.8	12.0	5,790	42.3	3.4
Aug-05-2010	12	27.8	11.0	5,570	40.5	2.7
Aug-06-2010	12	27.1	11.0	5,340	37.0	2.4
Aug-07-2010	14	27.4	13.0	5,130	37.1	2.7
Aug-08-2010	18	27.1	12.0	5,700	37.1	3.7
Aug-09-2010	20	26.2	12.0	5,470	38.8	4.3
Aug-10-2010	18	27.2	12.0	5,280	36.3	3.6
Aug-11-2010	14	27.5	12.0	5,620	41.4	3.2
Aug-12-2010	14	27.1	11.0	5,380	40.5	3.1
Aug-13-2010	15	27.7	9.0	4,730	33.8	2.8
Aug-14-2010	15	28.3	8.3	4,160	33.0	2.7
Aug-15-2010	15	28.2	8.5	4,210	35.2	2.9
Aug-16-2010	16	27.8	8.1	4,220	33.0	2.8
Aug-17-2010	14	28.7	8.5	4,210	31.3	2.4
Aug-18-2010	14	28.6	8.6	4,430	34.6	2.6
Aug-19-2010	14	27.9	11.0	4,780	36.5	2.7
Aug-20-2010	15	28.5	11.0	5,690	34.7	2.9
Aug-21-2010	14	28.4	10.0	5,540	31.9	2.5
Aug-22-2010	16	27.1	9.8	4,880	31.0	2.8
Aug-23-2010	14	26.5	10.0	5,200	36.3	2.7
Aug-24-2010	13	27.0	11.0	5,410	39.1	2.7
Aug-25-2010	16	28.5	10.0	5,420	36.0	3.1
Aug-26-2010	15	29.1	9.2	5,140	36.3	3.0
Aug-27-2010	15	27.9	9.1	4,970	33.8	2.8
Aug-28-2010	15	25.2	10.0	5,090	43.1	3.5
Aug-29-2010	16	23.9	11.0	5,450	41.5	3.7
Aug-30-2010	17	23.7	10.0	5,700	39.3	3.6
Aug-31-2010	18	24.0	9.2	5,180	35.0	3.4
Mean	15	27.2	10.5	5,220	37.6	3.0
Total Acre-feet	930					
Total (lbs)						94

Load Limitation for August 2010 (lbs)	225
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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.

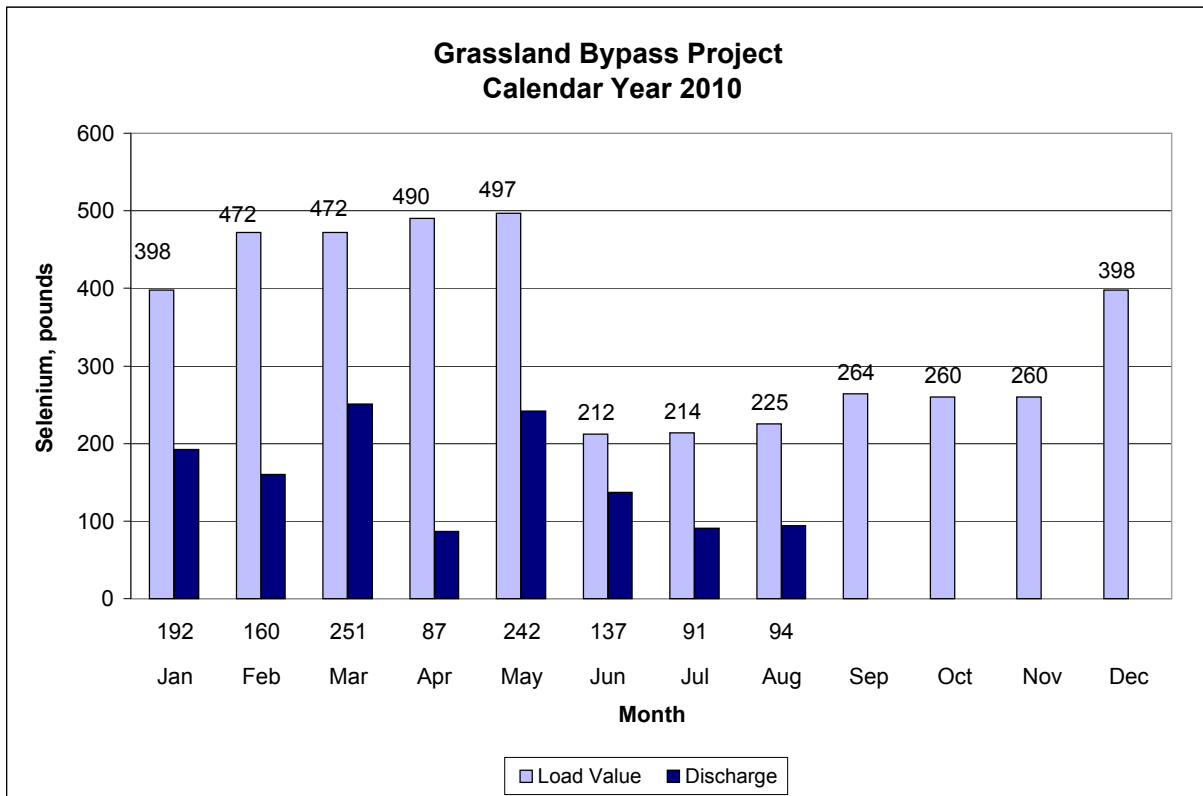


Table 3. Continuous water monitoring at Station D (Mud Slough North downstream of drainage discharges), August 2010.

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	usgs	usgs	usgs
UNITS	cfs	°C	µS/cm
Aug-01-2010	24	25.5	4,150
Aug-02-2010	32	25.7	3,140
Aug-03-2010	41	26.1	2,690
Aug-04-2010	45 e	26.5	2,470
Aug-05-2010	30 e	26.3	3,030
Aug-06-2010	26 e	25.8	3,750
Aug-07-2010	27	26.1	3,920
Aug-08-2010	29	25.6	4,270
Aug-09-2010	31	25.3	4,060
Aug-10-2010	32	25.6	3,670
Aug-11-2010	26	24.8	4,110
Aug-12-2010	24	24.8	4,530
Aug-13-2010	27	25.6	4,120
Aug-14-2010	41	25.6	2,430
Aug-15-2010	56	25.4	2,020
Aug-16-2010	60	25.7	1,800
Aug-17-2010	46	26.1	1,980
Aug-18-2010	33	25.5	2,540
Aug-19-2010	35	25.2	2,660
Aug-20-2010	30	25.8	3,410
Aug-21-2010	25	25.4	4,280
Aug-22-2010	27	24.5	4,470
Aug-23-2010	32	24.2	4,030
Aug-24-2010	37	25.3	3,360
Aug-25-2010	34	26.6	3,460
Aug-26-2010	31	26.6	3,760
Aug-27-2010	37	25.5	3,640
Aug-28-2010	58	23.3	2,440
Aug-29-2010	59	21.9	2,520
Aug-30-2010	74	21.9	2,150
Aug-31-2010	65	22.5	2,290
Mean	38	25.2	3,260

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), August 2010.

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	usgs	usgs	usgs
UNITS	cfs	°C	µS/cm
Aug-01-2010	135	24.7	904
Aug-02-2010	151	24.8	853
Aug-03-2010	166	25.1	830
Aug-04-2010	158	25.5	887
Aug-05-2010	144	25.1	926
Aug-06-2010	143	24.5	953
Aug-07-2010	144	24.4	928
Aug-08-2010	151	23.9	838
Aug-09-2010	158	23.4	859
Aug-10-2010	168	23.8	851
Aug-11-2010	168	23.5	848
Aug-12-2010	150	23.4	901
Aug-13-2010	143	24.4	921
Aug-14-2010	152	24.8	835
Aug-15-2010	158	24.5	820
Aug-16-2010	160	24.5	832
Aug-17-2010	165	25.1	780
Aug-18-2010	155	24.9	827
Aug-19-2010	130	24.3	960
Aug-20-2010	122	24.7	1,010
Aug-21-2010	122	24.3	960
Aug-22-2010	128	23.0	924
Aug-23-2010	137	23.0	925
Aug-24-2010	152	24.1	867
Aug-25-2010	150	25.5	886
Aug-26-2010	140	25.7	940
Aug-27-2010	136	24.6	942
Aug-28-2010	141	21.8	902
Aug-29-2010	146	20.4	907
Aug-30-2010	148	20.8	912
Aug-31-2010	145	21.2	922
Mean	147	24.0	890

Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), August 2010.

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
Aug-01-2010	495	25.0	1,000	1.2
Aug-02-2010	542	25.1	1,010	1.3
Aug-03-2010	552	25.4	990	1.7
Aug-04-2010	559	25.8	950	1.5
Aug-05-2010	563	25.2	940	1.6
Aug-06-2010	559	24.9	980	1.4
Aug-07-2010	515	25.3	960	1.2
Aug-08-2010	545	25.3	940	1.2
Aug-09-2010	562	25.2	900	1.3
Aug-10-2010	526	25.3	920	1.4
Aug-11-2010	511	24.8	1,010	1.7
Aug-12-2010	506	24.3	1,060	1.6
Aug-13-2010	479	25.2	1,060	1.6
Aug-14-2010	449	25.0	1,140	1.4
Aug-15-2010	495	24.6	1,120	1.7
Aug-16-2010	579	24.7	900	1.3
Aug-17-2010	587	25.7	860	1.3
Aug-18-2010	560	24.9	840	1.1
Aug-19-2010	567	24.5	850	1.1
Aug-20-2010	517	25.2	930	1.2
Aug-21-2010	517	24.7	990	1.1
Aug-22-2010	550	23.2	950	1.1
Aug-23-2010	503	23.7	980	1.1
Aug-24-2010	439	24.8	1,050	1.2
Aug-25-2010	421	26.1	1,180	1.3
Aug-26-2010	443	26.4	1,080	1.4
Aug-27-2010	456	25.0	1,080	1.3
Aug-28-2010	464	23.6	1,050	1.3
Aug-29-2010	495	22.2	1,110	1.5
Aug-30-2010	596	22.3	890	1.4
Aug-31-2010	609	22.5	830	1.5
Mean	521	24.7	990	1.4

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	.	.	.
Jun-07-2010	21	.	.	5,130	70	.	.	.
Jun-14-2010	21	.	.	3,850	112	.	.	.
Jun-21-2010	27	.	.	3,510	116	.	.	.
Jun-28-2010	25	.	.	4,940	133	.	.	.
Jul-06-2010	15	.	.	5,650	84	.	.	.
Jul-12-2010	18	.	.	4,380	73	.	.	.
Jul-19-2010	16	.	.	4,910	88	.	.	.
Jul-26-2010	17	.	.	5,980	73	.	.	.
Aug-02-2010	18	.	.	5,450	104	.	.	.
Aug-09-2010	21	.	.	4,410	153	.	.	.
Aug-16-2010	17	.	.	4,820	100	.	.	.
Aug-23-2010	16	.	.	5,130	66	.	.	.
Aug-30-2010	21	.	.	4,910	104	.	.	.

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
Jun-13-2010	22	.	.	3,970	.	47.7	.	9.4
Jun-20-2010	25	.	.	3,500	.	32.3	.	6.6
Jun-27-2010	31	.	.	4,780	.	35.8	.	7.8
Jul-04-2010	18	.	.	5,840	.	41.4	.	11.0
Jul-11-2010	17	.	.	4,730	.	39.4	.	10.0
Jul-18-2010	17	.	.	5,030	.	45.7	.	9.8
Jul-25-2010	17	.	.	5,810	.	42.4	.	9.6
Aug-03-2010	18	.	.	5,390	.	40.5	.	12.0
Aug-10-2010	18	.	.	4,330	.	36.3	.	12.0
Aug-17-2010	17	.	.	5,300	.	31.3	.	8.5
Aug-24-2010	19	.	.	5,380	.	39.1	.	11.0
Aug-31-2010	15	.	.	5,500	.	35.0	.	9.2

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	SLDMWA	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C	.	µS/cm	mg/L	µg/L	mg/L
Jun-08-2010	18	25.3	8.9	4,820	48	51.3	9.7
Jun-15-2010	19	24.5	9.0	5,330	36	45.2	11.0
Jun-22-2010	26	22.3	7.9	3,480	98	28.7	6.1
Jun-29-2010	22	26.6	7.2	3,980	77	25.3	7.2
Jul-06-2010	14	26.0	9.0	5,180	72	33.7	10.0
Jul-13-2010	14	25.8	8.6	5,530	45	37.5	12.0
Jul-20-2010	12	26.6	7.8	4,560	49	34.2	9.2
Jul-27-2010	13	25.1	8.4	4,920	57	36.2	10.0
Aug-03-2010	15	25.3	9.0	5,790	51	38.7	12.0
Aug-10-2010	18	24.0	8.3	4,920	50	31.8	10.0
Aug-17-2010	14	25.0	7.5	4,180	62	29.8	8.2
Aug-24-2010	13	24.5	7.7	5,320	31	35.9	10.0
Aug-31-2010	18	21.4	8.3	4,730	31	35.0	10.0

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
Jun-08-2010	37	23.5	7.7	1,480	.	0.7	1.7
Jun-15-2010	36	22.2	7.6	1,770	.	0.5	1.9
Jun-22-2010	38	23.3	7.7	990	.	0.8	1.7
Jun-29-2010	30	25.4	7.6	1,550	.	1.1	1.8
Jul-06-2010	20	24.1	8.0	1,210	.	0.6	1.9
Jul-13-2010	15	24.5	8.1	1,410	.	1.0	2.2
Jul-20-2010	16	24.9	7.8	1,190	.	1.1	2.3
Jul-27-2010	17	23.7	8.2	1,240	.	1.7	1.4
Aug-03-2010	26	24.2	7.9	1,120	.	0.9	1.1
Aug-10-2010	14	23.5	8.1	1,030	.	1.0	1.2
Aug-17-2010	32	24.2	8.4	800	.	0.6	0.9
Aug-24-2010	24	24.0	7.2	840	.	1.2	0.7
Aug-31-2010	47	20.3	7.8	700	.	1.1	0.5

** 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
Jun-08-2010	55	23.8	8.1	2,850	16.9	4.3
Jun-15-2010	55	22.6	8.2	3,250	20.8	5.2
Jun-22-2010	64	22.2	8.0	2,590	14.4	3.8
Jun-29-2010	52	26.7	7.5	2,860	12.6	4.6
Jul-06-2010	36	24.4	8.6	3,550	16.6	6.0
Jul-13-2010	29	24.8	8.3	3,920	20.4	7.8
Jul-20-2010	28	25.1	7.4	3,210	18.7	5.9
Jul-27-2010	30	24.3	8.3	3,290	18.2	5.8
Aug-03-2010	41	24.1	8.7	2,850	15.9	5.3
Aug-10-2010	32	22.2	8.0	3,880	23.6	7.1
Aug-17-2010	46	24.1	8.0	2,030	10.4	3.3
Aug-24-2010	37	23.4	7.2	3,040	16.4	5.2
Aug-31-2010	65	20.4	8.0	2,080	11.3	3.4

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
Jun-02-2010	.	7.8	2,900	NA	15.9	3.5
Jun-10-2010	.	7.4	3,140	40	15.2	3.9
Jun-15-2010	.	8.5	3,440	30	20.3	5.0
Jun-24-2010	.	7.7	3,130	NA	15.1	4.3
Jun-29-2010	.	8.7	2,970	68	12.2	4.3
Jul-07-2010	.	8.9	3,690	44	15.2	5.6
Jul-22-2010	.	8.5	3,990	26	21.7	6.2
Jul-27-2010	.	8.7	3,370	68	18.2	5.7
Aug-04-2010	.	8.8	2,580	64	12.4	4.2
Aug-12-2010	.	7.9	3,570	23	28.9**	8.6**
Aug-16-2010	.	9.1	1,990	25	9.3	2.7

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
Jun-08-2010	131	23.0	5.7	1,070	0.4	0.5
Jun-15-2010	186	22.6	7.4	900	0.4	0.4
Jun-22-2010	180	20.9	6.6	1,040	0.5	0.4
Jun-29-2010	162	25.3	6.8	900	0.9	0.5
Jul-06-2010	163	24.8	7.0	930	0.4	0.5
Jul-13-2010	149	23.8	7.4	950	0.4	0.5
Jul-20-2010	145	24.2	6.7	950	0.6	0.5
Jul-27-2010	143	22.4	7.6	820	0.6	0.4
Aug-03-2010	166	24.0	7.4	830	<0.4	0.4
Aug-10-2010	168	22.1	6.7	790	0.6	0.4
Aug-17-2010	165	23.5	7.7	710	0.5	0.3
Aug-24-2010	152	23.0	7.0	820	0.8	0.4
Aug-31-2010	145	19.4	7.7	950	0.5	0.5

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 ^{††}	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jun-07-2010	25	.	.	400	0.6	0.2
Jun-14-2010	40	.	.	390	0.7	0.2
Jun-21-2010	60	.	.	370	0.8	0.3
Jun-28-2010	25	.	.	440	0.9	0.3
Jul-06-2010	10	.	.	330	0.7	0.2
Jul-12-2010	0	.	.	410	0.5	0.3
Jul-19-2010	0	.	.	320	0.5	0.2
Jul-26-2010	0	.	.	470	0.7	0.2
Aug-02-2010	0	.	.	350	0.4	0.2
Aug-09-2010	20	.	.	410	0.6	0.2
Aug-16-2010	30	.	.	510	<0.4	0.3
Aug-23-2010	30	.	.	500	0.7	0.2
Aug-30-2010	40	.	.	450	0.8	0.2

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 ^{††}	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jun-07-2010	15	.	.	370	0.6	0.2
Jun-14-2010	55	.	.	380	0.8	0.2
Jun-21-2010	55	.	.	380	0.8	0.3
Jun-28-2010	75	.	.	400	1.0	0.3
Jul-06-2010	10	.	.	420	0.7	0.3
Jul-12-2010	0	.	.	300	0.5	0.2
Jul-19-2010	0	.	.	450	1.2	0.4
Jul-26-2010	0	.	.	860	1.6	1.5
Aug-02-2010	0	.	.	420	1.2	0.3
Aug-09-2010	0	.	.	480	1.4	0.3
Aug-16-2010	70	.	.	420	0.7	0.2
Aug-23-2010	95	.	.	560	0.6	0.3
Aug-30-2010	70	.	.	420	0.7	0.2

Note: The peak in selenium is caused by no flow conditions at this site.

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 ^{††}	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jun-07-2010	NA	.	.	680	2.2	0.7
Jun-14-2010	NA	.	.	1,230	1.4	1.2
Jun-21-2010	NA	.	.	1,500	1.6	1.5
Jun-28-2010	NA	.	.	1,560	2.4	1.8
Jul-06-2010	NA	.	.	960	0.9	1.9
Jul-12-2010	NA	.	.	1,140	1.6	2.1
Jul-19-2010	NA	.	.	510	0.9	0.4
Jul-26-2010	NA	.	.	560	0.9	0.4
Aug-02-2010	NA	.	.	510	0.5	0.3
Aug-09-2010	NA	.	.	500	0.7	0.4
Aug-16-2010	NA	.	.	550	0.5	0.3
Aug-23-2010	NA	.	.	460	0.7	0.2
Aug-30-2010	NA	.	.	460	0.8	0.2

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 ^{††}	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jun-07-2010	NA	.	.	570	0.7	0.7
Jun-14-2010	NA	.	.	630	0.9	0.8
Jun-21-2010	NA	.	.	860	1.0	1.4
Jun-28-2010	NA	.	.	880	1.4	1.5
Jul-06-2010	NA	.	.	880	0.8	1.6
Jul-12-2010	NA	.	.	900	1.1	1.9
Jul-19-2010	NA	.	.	1,040	1.2	2.2
Jul-26-2010	NA	.	.	880	1.1	1.7
Aug-02-2010	NA	.	.	920	0.8	1.7
Aug-09-2010	NA	.	.	940	1.1	1.6
Aug-16-2010	NA	.	.	970	1.0	1.6
Aug-23-2010	NA	.	.	660	0.8	0.4
Aug-30-2010	NA	.	.	670	0.8	0.5

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
Jun-07-2010	.	.	.	390	0.6	0.3
Jun-14-2010	.	.	.	650	0.6	0.3
Jun-21-2010	.	.	.	370	0.8	0.3
Jun-28-2010	.	.	.	360	1.1	0.3
Jul-06-2010	.	.	.	320	0.7	0.3
Jul-12-2010	.	.	.	320	0.4	0.2
Jul-19-2010	.	.	.	310	0.6	0.2
Jul-26-2010	.	.	.	320	0.8	0.2
Aug-02-2010	.	.	.	530	0.5	0.3
Aug-09-2010	.	.	.	350	0.8	0.2
Aug-16-2010	.	.	.	400	<0.4	0.2
Aug-23-2010	.	.	.	380	0.4	0.2
Aug-30-2010	.	.	.	430	0.7	0.2

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
Jun-08-2010	559	25.5	7.8	590	0.4	0.3
Jun-15-2010	547	23.9	7.5	600	0.4	0.3
Jun-22-2010	319	23.1	7.5	970	0.5	0.4
Jun-29-2010	287	28.0	7.7	750	0.6	0.4
Jul-06-2010	266	24.5	7.7	1,060	<0.4	0.4
Jul-13-2010	265	25.7	7.7	890	<0.4	0.4
Jul-20-2010	203	25.8	7.0	1,060	0.5	0.5
Jul-27-2010	251	24.9	7.2	780	0.6	0.3
Aug-03-2010	247	23.6	7.9	890	<0.4	0.3
Aug-10-2010	216	23.5	7.0	760	<0.4	0.3
Aug-17-2010	209 e	24.1	7.7	650	<0.4	0.3
Aug-24-2010	171	22.4	7.4	980	0.5	0.4
Aug-31-2010	248	20.8	7.6	950	0.6	0.4

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
Jun-02-2010	.	.	.	818	2.0	0.6
Jun-09-2010	.	.	.	919	1.9	0.6
Jun-16-2010	.	.	.	1,030	1.7	0.7
Jun-23-2010	.	.	.	1,180	0.8	0.6
Jun-30-2010	.	.	.	1,410	2.0	0.9
Jul-07-2010	.	.	.	1,360	1.7	0.9
Jul-14-2010	.	.	.	1,400	2.2	1.1
Jul-21-2010	.	.	.	1,050	1.5	0.7
Jul-28-2010	.	.	.	1,280	2.4	1.0
Aug-04-2010	.	.	.	1,050	1.1	0.7
Aug-11-2010	.	.	.	1,330	2.5	1.1
Aug-18-2010	.	.	.	1,100	1.6	0.7
Aug-25-2010	.	.	.	1,430	1.9	1.0

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
Jun-08-2010	1,550	23.3	7.9	530	0.9	0.3
Jun-15-2010	1150	23.5	7.7	730	1.2	0.5
Jun-22-2010	889	23.2	7.9	820	1.3	0.5
Jun-29-2010	761	26.7	7.8	900	1.7	0.6
Jul-06-2010	606	23.9	7.8	1,090	1.0	0.6
Jul-13-2010	513	25.0	8.0	1,130	1.4	0.8
Jul-20-2010	496	25.2	7.6	1,220	1.8	0.9
Jul-27-2010	540	24.1	7.6	1,000	1.9	0.7
Aug-03-2010	552	23.5	7.9	1,050	1.5	0.7
Aug-10-2010	526	23.5	7.0	950	1.4	0.8
Aug-17-2010	587	24.1	7.9	860	1.1	0.6
Aug-24-2010	439	22.5	7.3	1,050	1.3	0.8
Aug-31-2010	609	21.1	7.1	860	1.4	0.6

Table 20. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from September 2009 to August 2010. 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	%	%	%	%	%	%
Sep-2009	100	98	98	100	100	98
Oct-2009	100	100	95	95	95	100
Nov-2009	100	93	90	83	95	100
Dec-2009	98	88	93	98	100	98
Jan-2010	98	95	98	100	98	100
Feb-2010	98	100	95	95	100	90
Mar-2010	98	95	95	100	98	100
Apr-2010	95	98	100	100	100	98
May-2010	95	93	98	85	90	95
Jun-2010	100	100	100	98	95	98
Jul-2010	95	98	100	100	100	93
Aug-2010	98	98	98	98	93	95

Table 21. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from September 2009 to August 2010. 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
Sep-2009	0.43	0.41	0.42	0.45	0.39	0.43
Oct-2009	0.51	0.52	0.49	0.50	0.41	0.44
Nov-2009	0.38	0.40	0.37	0.38	0.36	0.43
Dec-2009	0.50	0.48	0.52	0.49	0.46	0.47
Jan-2010	0.43	0.49	0.50	0.48	0.49	0.41
Feb-2010	0.47	0.53	0.49	0.52	0.49	0.51
Mar-2010	0.41	0.48	0.48	0.46	0.40	0.45
Apr-2010	0.53	0.48	0.53	0.50	0.43	0.48
May-2010	0.35	0.34	0.36	0.39	0.37	0.37
Jun-2010	0.37	0.34	0.35	0.35	0.37	0.38
Jul-2010	0.35*	0.37	0.39	0.37	0.41	0.41
Aug-2010	0.32	0.28	0.33	0.33	0.26	0.35

Table 22. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from September 2009 to August 2010. 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	%	%	%	%	%	%
Sep-2009	100	100	80	90	100	100
Oct-2009	80	90	100	90	90	100
Nov-2009	90	80	90	90	70†	70†
Dec-2009	90	90	90	100	100	80
Jan-2010	100	90	90	100	90	100
Feb-2010	90	90	90	100	100	90
Mar-2010	90	100	90	80	90	90
Apr-2010	70	90	90	80	40†	80
May-2010	80	70	100	100	90	80
Jun-2010	100	100	100	90	90	100
Jul-2010	90	100	90	90	100	100
Aug-2010	100	100	100	100	90	50†

Table 23. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from September 2009 to August 2010. 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
Sep-2009	34.8	43.3	26.8	25.1	28.7	22.7
Oct-2009	36.7	32.8	42.2	33.5	31.1	28.8
Nov-2009	38.5	21.3	29.1	21.8	16.4	18.6
Dec-2009	30.2	30.7	35.4	35.2	39.7	30.9
Jan-2010	39.7	32.3	44.1	30.7	34.4	33.8
Feb-2010	22.9	22.1	26.2	25.7	23.1	25.4
Mar-2010	23.6	28.4	23.3	19.5	25.0	16.6
Apr-2010	34.8	41.4	39.2	24.1	20.1	28.5
May-2010	30.6	45.4	39.3	42.9	33.8	19.4
Jun-2010	23.0	27.2	29.5	24.2	23.1	21.4
Jul-2010	43.6	48.8	46.3	46.6	38.7	38.6
Aug-2010	27.7	31.8	28.4	25.8	26.1	2.6†††

Table 24. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from September 2009 to August 2010. 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 ⁵ cells/mL	10 ⁵ cells/mL	10 ⁵ cells/mL	10 ⁵ cells/mL	10 ⁵ cells/mL	10 ⁵ cells/mL
Sep-2009	31.6	32.6	25.6	28.9	27.6	22.3
Oct-2009	35.3	30.5	32.2	26.8	20.4	19.2
Nov-2009	20.6*	39.0	35.8	33.5	26.2	28.1
Dec-2009	6.8*	28.5	21.7	26.7	20.9	24.1
Jan-2010	0.2*	27.5	1.4*	28.9	20.8	19.8
Feb-2010	19.1*	36.0	31.7	29.9	28.7	23.1
Mar-2010	17.6	28.4	27.8	27.4	19.5	15.5
Apr-2010	5.2*	22.2	25.1	33.2	26.3	24.7
May-2010	12.8	23.5	23.2	26.4	15.0	11.3
Jun-2010	17.7	29.6	24.8	33.0	22.7	22.0
Jul-2010	17.6	25.3	18.8	19.7	17.6	16.1
Aug-2010	19.6	25.0	21.8	28.8	21.4	22.3

Table 25. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, June 2010 to August 2010.

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
Jun-14-2010	55	0.5	23	0.4	<0.4
Jun-16-2010	45	0.5	22	<0.4	<0.4
Jun-18-2010	31	0.4	17	<0.4	<0.4
Jul-12-2010	39	0.5	32	0.4	<0.4
Jul-14-2010	41	0.9	24	0.4	0.4
Jul-16-2010	31	1.1	19	0.4	0.4
Aug-09-2010	37	1.1**	25	<0.4	0.7
Aug-11-2010	40	0.9**	25	<0.4	0.5
Aug-13-2010	26	0.6	32**	0.4	<0.4

Table 26. Summary of total suspended solids concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, June 2010 to August 2010.

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
Jun-14-2010	39	44	49	43	24
Jun-16-2010	79	62	100	48	27
Jun-18-2010	93	52	90	126	35
Jul-12-2010	44	81	61	78	26
Jul-14-2010	52	71	74	95	12
Jul-16-2010	68	108	88	147	29
Aug-09-2010	51	29	44	102	17
Aug-11-2010	96	31	72	75	26
Aug-13-2010	102	35	115	106	25

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 µg/L as of June 1998.
❖	Based on definitive bioassay, NOEC is 50 percent
D	Sample was dechlorinated