

GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

September 2010

April 11, 2011

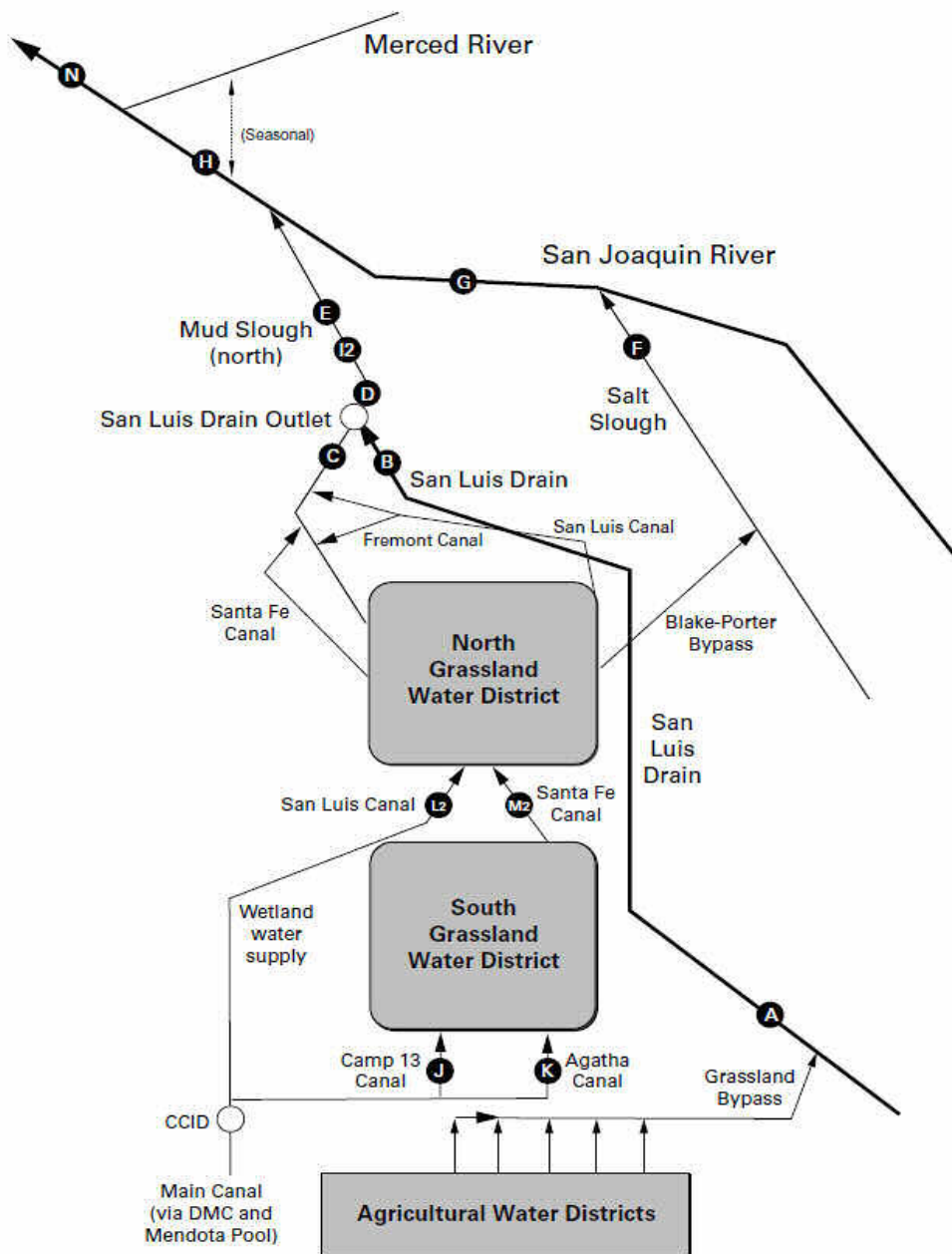
Preliminary Results

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 DATA REPORT

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

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Specific Conductance
DATA SOURCE	SLDMWA	SLDMWA
UNITS	cfs	µS/cm
Sep-01-2010	15	5,730
Sep-02-2010	14	5,530
Sep-03-2010	12	5,660
Sep-04-2010	11	5,380
Sep-05-2010	12	4,610
Sep-06-2010	14	4,950
Sep-07-2010	13	5,100
Sep-08-2010	14	5,110
Sep-09-2010	14	4,750
Sep-10-2010	15	4,720
Sep-11-2010	16	4,340
Sep-12-2010	17	3,980
Sep-13-2010	16	4,060
Sep-14-2010	14	4,580
Sep-15-2010	14	4,110
Sep-16-2010	16	4,460
Sep-17-2010	13	4,510
Sep-18-2010	12	4,790
Sep-19-2010	13	5,210
Sep-20-2010	11	5,060
Sep-21-2010	9	5,100
Sep-22-2010	8	5,400
Sep-23-2010	7	5,340
Sep-24-2010	7	5,280
Sep-25-2010	7	5,330
Sep-26-2010	5	5,030
Sep-27-2010	4	5,350
Sep-28-2010	6	5,670
Sep-29-2010	5	5,480
Sep-30-2010	5	5,380
.	.	.
Mean	11	5,000

Table 2a. Continuous water monitoring at Stations B and B2 (San Luis Drain Terminus), September 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
Sep-01-2010	14	24.2	11.0	4,950	29.8	2.2
Sep-02-2010	13	24.5	10.0	4,810	29.4	2.1
Sep-03-2010	13	25.8	9.8	4,790	26.5	1.8
Sep-04-2010	11	26.5	9.4	4,570	25.2	1.5
Sep-05-2010	10	26.7	9.7	4,670	27.0	1.4
Sep-06-2010	10	25.7	10.0	4,840	27.3	1.5
Sep-07-2010	12	26.5	10.0	4,740	26.1	1.7
Sep-08-2010	11	21.2	11.0	4,320	27.3	1.7
Sep-09-2010	12	20.5	11.0	4,360	24.6	1.6
Sep-10-2010	13	23.0	11.0	4,410	26.3	1.9
Sep-11-2010	14	25.2	9.5	4,470	26.3	2.0
Sep-12-2010	15	26.3	8.5	4,540	23.7	1.9
Sep-13-2010	16	21.9	8.7	4,600	24.2	2.1
Sep-14-2010	16	24.0	8.6	4,770	23.8	2.1
Sep-15-2010	16	23.8	8.4	4,500	19.4	1.6
Sep-16-2010	15	24.1	8.4	4,230	21.6	1.7
Sep-17-2010	17	24.8	8.1	4,200	17.7	1.6
Sep-18-2010	14	25.3	7.5	3,910	16.0	1.2
Sep-19-2010	13	25.0	7.8	3,890	16.7	1.1
Sep-20-2010	13	24.7	8.1	3,980	17.7	1.3
Sep-21-2010	12	24.1	7.0	4,030	16.9	1.1
Sep-22-2010	10	23.2	7.8	3,800	22.6	1.2
Sep-23-2010	10	22.6	7.7	4,140	20.2	1.0
Sep-24-2010	9	22.7	7.5	4,060	20.1	1.0
Sep-25-2010	8	22.8	7.5	4,020	21.3	0.9
Sep-26-2010	8	23.6	7.6	4,090	21.5	0.9
Sep-27-2010	7	23.4	8.3	4,270	20.4	0.8
Sep-28-2010	7	24.3	8.6	4,580	18.4	0.6
Sep-29-2010	7	25.2	8.4	4,640	17.2	0.7
Sep-30-2010	7	25.1	8.5	4,480	13.6	0.5
.
Mean	12	24.2	8.9	4,390	15.4	1.4
Total Acre-feet	700					
Total (lbs)						43

Load Limitation for September 2010 (lbs)	264
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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.

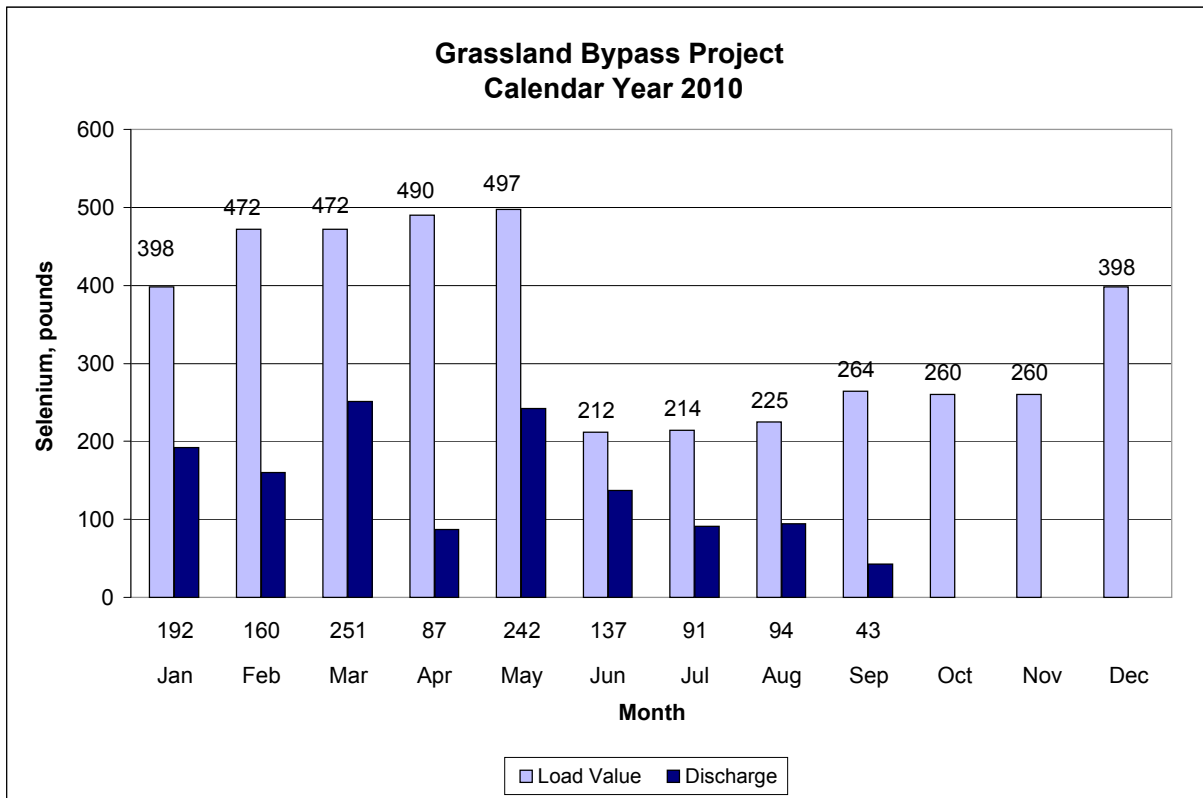


Table 3. Continuous water monitoring at Station D (Mud Slough North downstream of drainage discharges), September 2010.

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
Sep-01-2010	46	23.5	2,460
Sep-02-2010	41	24.5	2,580
Sep-03-2010	45	25.2	2,180
Sep-04-2010	37	25.4	2,300
Sep-05-2010	36	24.9	2,370
Sep-06-2010	42	24.0	2,080
Sep-07-2010	48	23.7	2,100
Sep-08-2010	49	22.1	2,120
Sep-09-2010	52	21.6	2,270
Sep-10-2010	39	22.1	3,040
Sep-11-2010	38	22.8	3,210
Sep-12-2010	37	23.3	3,170
Sep-13-2010	40	23.2	3,120
Sep-14-2010	47	22.6	2,760
Sep-15-2010	42	22.6	2,950
Sep-16-2010	47	22.8	2,410
Sep-17-2010	52	23.7	2,350
Sep-18-2010	49	24.0	2,130
Sep-19-2010	41	23.1	2,310
Sep-20-2010	38	22.9	2,570
Sep-21-2010	35	22.7	2,700
Sep-22-2010	35	21.7	2,390
Sep-23-2010	37	21.2	2,340
Sep-24-2010	37	21.6	2,240
Sep-25-2010	43	22.2	1,830
Sep-26-2010	37	22.7	2,110
Sep-27-2010	40	23.0	1,920
Sep-28-2010	49	23.9	1,660
Sep-29-2010	50	24.5	1,810
Sep-30-2010	70	24.8	1,400
Mean	43	23.2	2,360

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), September 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
Sep-01-2010	132	22.3	949
Sep-02-2010	124	23.7	969
Sep-03-2010	119	24.7	960
Sep-04-2010	115	24.8	958
Sep-05-2010	109	24.4	955
Sep-06-2010	107	23.4	961
Sep-07-2010	109	22.7	970
Sep-08-2010	100	21.0	1,010
Sep-09-2010	86	20.5	1,120
Sep-10-2010	89	21.0	1,190
Sep-11-2010	89	21.9	1,150
Sep-12-2010	83	22.8	1,190
Sep-13-2010	92	22.4	1,150
Sep-14-2010	95	21.6	1,090
Sep-15-2010	86	21.7	1,170
Sep-16-2010	87	22.0	1,270
Sep-17-2010	95	22.7	1,280
Sep-18-2010	106	23.1	1,150
Sep-19-2010	111	22.5	1,030
Sep-20-2010	113	22.0	1,040
Sep-21-2010	114	21.7	1,070
Sep-22-2010	107	20.6	1,080
Sep-23-2010	95	20.0	1,140
Sep-24-2010	84	20.6	1,180
Sep-25-2010	73	21.6	1,290
Sep-26-2010	73	22.2	1,350
Sep-27-2010	77	22.5	1,250
Sep-28-2010	84	23.1	1,170
Sep-29-2010	83	23.6	1,170
Sep-30-2010	84	23.7	1,150
.	.	.	.
Mean	97	22.4	1,110

Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), September 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
Sep-01-2010	696	22.9	780	1.3
Sep-02-2010	682	23.7	760	1.2
Sep-03-2010	630	24.7	770	1.0
Sep-04-2010	591	24.8	810	1.2
Sep-05-2010	597	24.4	780	1.0
Sep-06-2010	586	23.3	760	0.9
Sep-07-2010	588	23.3	760	0.9
Sep-08-2010	620	22.3	740	0.8
Sep-09-2010	738	21.2	670	0.7
Sep-10-2010	1,050	21.0	440	0.5
Sep-11-2010	1,450	19.4	290	<0.4
Sep-12-2010	1,810	19.2	260	<0.4
Sep-13-2010	1,970	19.1	240	<0.4
Sep-14-2010	2,020	18.8	250	<0.4
Sep-15-2010	1,760	19.1	280	0.4
Sep-16-2010	1,410	20.1	320	0.4
Sep-17-2010	1,220	21.2	380	0.5
Sep-18-2010	1,130	22.0	420	1.2
Sep-19-2010	1,020	21.9	480	0.5
Sep-20-2010	925	21.7	490	0.7
Sep-21-2010	813	21.8	590	0.4
Sep-22-2010	683	21.3	740	0.4
Sep-23-2010	680	20.9	800	0.6
Sep-24-2010	673	21.0	770	0.5
Sep-25-2010	619	21.4	840	0.6
Sep-26-2010	661	22.1	800	0.6
Sep-27-2010	664	22.3	760	0.5
Sep-28-2010	612	22.9	820	0.5
Sep-29-2010	605	23.3	820	0.6
Sep-30-2010	579	23.5	830	0.5
Mean	936	21.8	600	0.5

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	.	.	.
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	.	.	.
Sep-07-2010	13	.	.	5,090	70	.	.	.
Sep-13-2010	16	.	.	4,190	102	.	.	.
Sep-20-2010	11	.	.	5,030	41	.	.	.
Sep-27-2010	4	.	.	5,260	30	.	.	.

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
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
Sep-05-2010	12	.	.	4,820	.	34.9	.	10.0
Sep-12-2010	17	.	.	4,520	.	25.4	.	8.7
Sep-19-2010	13	.	.	5,150	.	29.6	.	8.4
Sep-26-2010	5	.	.	5,010	.	28.0	.	11.0

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	SLDMWA	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C	.	µS/cm	mg/L	µg/L	mg/L
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
Sep-07-2010	12	23.3	8.5	4,800	36	23.3	10.0
Sep-14-2010	16	21.6	8.8	4,670	64	24.2	8.8
Sep-21-2010	12	22.2	8.6	3,770	47	16.8	6.5
Sep-28-2010	7	22.9	8.5	4,420	47	18.6	8.6

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
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
Sep-07-2010	36	22.3	8.0	507	.	0.6	0.5
Sep-14-2010	31	20.0	8.0	917	.	0.6	0.6
Sep-21-2010	23	18.7	7.6	1,280	.	<0.4	1.0
Sep-28-2010	42	22.1	7.5	925	.	0.5	0.6

** 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
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
Sep-07-2010	48	22.3	8.2	2,040	7.7	3.2
Sep-14-2010	47	20.4	8.2	2,560	10.4	4.0
Sep-21-2010	35	20.4	7.8	2,940	8.5	4.3
Sep-28-2010	49	22.0	7.6	1,560	3.3	1.8

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
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
Sept-01-2010	.	8.3	2,420	44	10.7	3.9
Sept-08-2010	.	8.4	2,390	62	8.4	3.6
Sept-15-2010	.	8.4	2,940	37	10.3	4.8
Sept-23-2010	.	8.3	2,310	28	7.2	2.8
Sept-29-2010	.	7.9	1,990	26	3.4	2.2

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
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
Sep-07-2010	109	21.9	7.5	1,070	0.4	0.5
Sep-14-2010	95	19.2	7.5	1,140	0.5	0.5
Sep-21-2010	114	20.1	7.5	1,130	<0.4	0.5
Sep-28-2010	84	20.8	7.6	1,200	0.4	0.6

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
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
Sep-07-2010	30	.	.	470	0.4	0.2
Sep-13-2010	75	.	.	620	0.6	0.3
Sep-21-2010	105	.	.	610	0.5	0.5
Sep-27-2010	145	.	.	600	0.6	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
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
Sep-07-2010	95	.	.	470	0.4	0.2
Sep-13-2010	110	.	.	590	0.6	0.3
Sep-21-2010	130	.	.	1,630	1.1	0.2
Sep-27-2010	130	.	.	600	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
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
Sep-07-2010	NA	.	.	500	0.8	0.2
Sep-13-2010	NA	.	.	620	0.5	0.3
Sep-21-2010	NA	.	.	570	0.6	3.2
Sep-27-2010	NA	.	.	620	0.7	0.3

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
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
Sep-07-2010	NA	.	.	670	0.6	0.6
Sep-13-2010	NA	.	.	720	0.5	0.6
Sep-21-2010	NA	.	.	760	0.6	0.2
Sep-27-2010	NA	.	.	780	0.9	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
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
Sep-07-2010	.	.	.	460	0.6	0.2
Sep-13-2010	.	.	.	520	0.8	0.2
Sep-21-2010	.	.	.	470	0.6	0.2
Sep-27-2010	.	.	.	600	0.5	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
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	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
Sep-07-2010	247	22.3	7.6	629	<0.4	0.2
Sep-14-2010	300	20.9	7.5	658	<0.4	0.2
Sep-21-2010	212	20.6	7.5	793	<0.4	0.3
Sep-28-2010	162	22.1	7.8	954	<0.4	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
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	.	.	.	1,140	1.7	0.8
Aug-25-2010	.	.	.	1,440	1.9	1.0
Sep-01-2010	.	.	.	1,230	2.0	0.9
Sep-08-2010	.	.	.	911	1.2	0.7
Sep-15-2010	.	.	.	918	0.9	0.6
Sep-22-2010	.	.	.	1,290	0.9	0.8
Sep-29-2010	.	.	.	1,180	0.9	0.6

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
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
Sep-07-2010	588	21.5	7.8	780	0.7	0.4
Sep-14-2010	2,020	17.8	7.7	300	0.4	0.1
Sep-21-2010	813	20.6	7.5	600	0.4	0.3
Sep-28-2010	612	21.7	7.6	880	0.6	0.4

Table 20. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from October 2009 to September 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	%	%	%	%	%	%
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
Sep-2010	95	93	100	100	100	95

Table 21. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from October 2009 to September 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
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
Sep-2010	0.41	0.43	0.39	0.41	0.41	0.38

Table 22. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from October 2009 to September 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	%	%	%	%	%	%
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†
Sep-2010	100	100	90	100	88	90

Table 23. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from October 2009 to September 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
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†††
Sep-2010	35.5	29.8	30.0	28.1	24.3	20.0

Table 24. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from October 2009 to September 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
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
Sep-2010	22.6	28.9	26.3	29.1	25.1	25.2

Table 25. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, July 2010 to September 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
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
Sep-20-2010	16	<0.4	5.9	0.4	<0.4
Sep-22-2010	21	0.5	5.9	<0.4	<0.4
Sep-24-2010	20	<0.4	6.9	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, July 2010 to September 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
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
Sep-20-2010	46	36	46	74	13
Sep-22-2010	67	40	53	96	11
Sep-24-2010	79	56	70	82	17

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