GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

August 2001

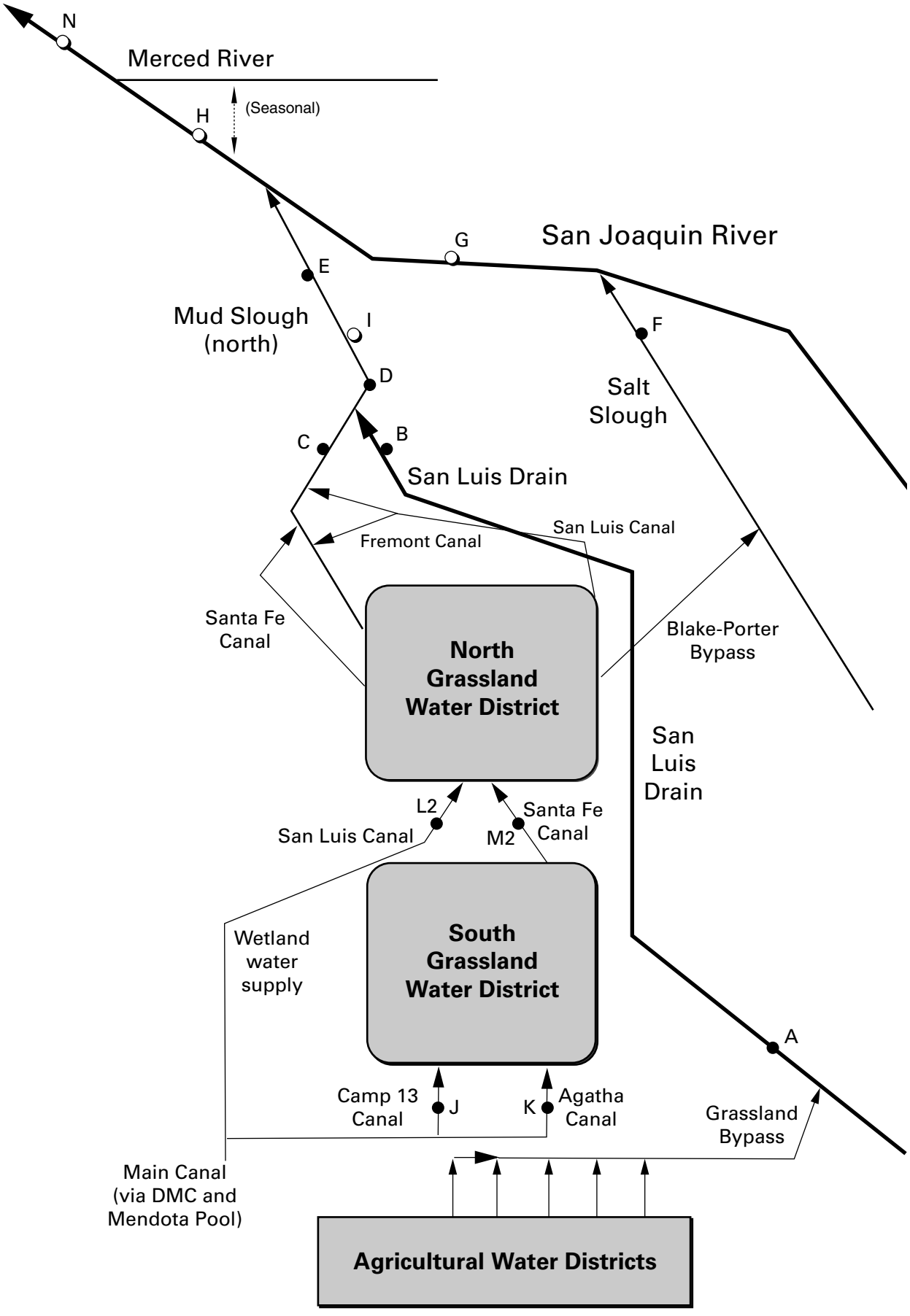
October 29, 2000

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


N
Merced River
(Seasonal)
H
G
San Joaquin River
E
Mud Slough
(north)
I
F
D
Salt
Slough
C
B
San Luis Drain
San Luis Canal
Fremont Canal
Santa Fe
Canal
North
Grassland
Water District
Blake-Porter
Bypass
San
Luis
Drain
L2
San Luis Canal
M2
Santa Fe
Canal
Wetland
water
supply
South
Grassland
Water District
A
Camp 13
Canal
J
K
Agatha
Canal
Grassland
Bypass
Main Canal
(via DMC and
Mendota Pool)
Agricultural Water Districts

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 2001.
2. Continuous water monitoring at Station B (discharge from San Luis Drain), August 2001.
3. Continuous water monitoring at Station D (Mud Slough North downstream of drainage discharges), August 2001.
4. Continuous water monitoring at Station F (Salt Slough at Highway 165), August 2001.
5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), August 2001.

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 2000 to August 2001.
19. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from September 2000 to August 2001.
20. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from September 2000 to August 2001.
21. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from September 2000 to August 2001.
22. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from September 2000 to August 2001.
23. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, June 2001 to August 2001.
24. Summary of sulfate concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, June 2001 to August 2001.
25. Summary of total suspended solids concentrations in grab water samples collected from June 2001 to August 2001.
26. Explanations of footnotes and agency abbreviations.

Table 1. Continuous water monitoring at Station A (inflow to San Luis Drain), August 2001.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Specific Conductance
DATA SOURCE	SLDMWA	SLDMWA
UNITS	cfs	µS/cm
Aug-01-2001	59	4,480
Aug-02-2001	55	4,270
Aug-03-2001	55	4,140
Aug-04-2001	56	3,930
Aug-05-2001	61	3,960
Aug-06-2001	61	3,760
Aug-07-2001	59	3,490
Aug-08-2001	56	3,690
Aug-09-2001	56	3,960
Aug-10-2001	55	3,910
Aug-11-2001	49	3,920
Aug-12-2001	53	4,100
Aug-13-2001	54	4,020
Aug-14-2001	57	3,830
Aug-15-2001	61	3,620
Aug-16-2001	59	3,860
Aug-17-2001	57	3,910
Aug-18-2001	56	3,820
Aug-19-2001	57	4,010
Aug-20-2001	56	4,160
Aug-21-2001	52	4,280
Aug-22-2001	48	4,160
Aug-23-2001	49	4,110
Aug-24-2001	62	3,980
Aug-25-2001	54	4,090
Aug-26-2001	50	4,580
Aug-27-2001	51	4,700
Aug-28-2001	49	4,880
Aug-29-2001	53	4,760
Aug-30-2001	50	4,350
Aug-31-2001	49	4,260
Mean	55	4,100

PRELIMINARY RESULTS

Table 2. Continuous water monitoring at Station B (discharge from San Luis Drain), August 2001.

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-01-2001	56	26.3	7.1	4,150	42.1	12.7
Aug-02-2001	59	26.3	6.5	3,810	36.9	11.7
Aug-03-2001	55	26.2	6.9	4,180	43.8	13.0
Aug-04-2001	56	26.4	6.8	4,310	48.7	14.7
Aug-05-2001	57	26.5	6.5	4,100	42.2	13.0
Aug-06-2001	61	26.6	6.7	4,040	40.2	13.2
Aug-07-2001	61	27.0	6.2	3,710	34.4	11.3
Aug-08-2001	59	28.1	6.3	3,720	35.7	11.4
Aug-09-2001	56	28.2	5.9	3,540	31.6	9.5
Aug-10-2001	56	27.3	5.5	3,310	25.9	7.8
Aug-11-2001	55	26.4	5.5	3,300	27.7	8.2
Aug-12-2001	51	26.1	5.7	3,530	30.9	8.5
Aug-13-2001	54	25.6	5.8	3,640	33.5	9.8
Aug-14-2001	56	25.4	5.9	3,560	28.2	8.5
Aug-15-2001	59	25.7	6.1	3,680	30.2	9.6
Aug-16-2001	61	26.0	6.1	3,520	34.9	11.5
Aug-17-2001	60	26.4	5.6	3,570	32.0	10.4
Aug-18-2001	58	26.8	5.1	3,330	28.4	8.9
Aug-19-2001	57	26.8	5.5	3,560	31.3	9.6
Aug-20-2001	57	26.1	5.8	3,660	32.8	10.1
Aug-21-2001	56	24.9	5.7	3,570	30.7	9.3
Aug-22-2001	53	24.3	5.9	3,740	35.0	10.0
Aug-23-2001	50	24.2	5.8	3,760	42.7	11.5
Aug-24-2001	52	24.8	6.0	3,900	47.6	13.3
Aug-25-2001	62	25.4	6.1	3,900	44.3	14.8
Aug-26-2001	55	26.0	5.9	3,760	40.0	11.9
Aug-27-2001	52	26.4	5.4	3,640	41.3	11.6
Aug-28-2001	53	26.6	5.2	3,580	43.2	12.3
Aug-29-2001	50	26.5	6.1	3,930	45.1	12.2
Aug-30-2001	54	25.1	6.5	4,240	58.4	17.0
Aug-31-2001	51	24.0	6.7	4,510	56.3	15.5
Mean	56	26.1	6.0	3,770	37.9	
Total						**353**

Load Limitation for August 2001	**(lbs)**	**453**

Table 3. Continuous water monitoring at Station D (Mud Slough North downstream of drainage discharges), August 2001.

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-01-2001	67	25.9	4,010
Aug-02-2001	67	25.7	3,850
Aug-03-2001	64	25.6	3,840
Aug-04-2001	61	25.8	4,150
Aug-05-2001	66	26.0	3,900
Aug-06-2001	75	26.2	3,660
Aug-07-2001	73	26.7	3,540
Aug-08-2001	66	27.8	3,800
Aug-09-2001	64	27.9	3,690
Aug-10-2001	63	27.1	3,600
Aug-11-2001	59	26.4	3,490
Aug-12-2001	53	26.0	3,720
Aug-13-2001	59	25.5	3,770
Aug-14-2001	57	25.4	3,700
Aug-15-2001	58	25.7	3,870
Aug-16-2001	67	26.0	3,700
Aug-17-2001	68	26.2	3,260
Aug-18-2001	68	26.6	3,050
Aug-19-2001	62	26.7	3,460
Aug-20-2001	63	26.2	3,620
Aug-21-2001	62	25.2	3,580
Aug-22-2001	62	24.5	3,510
Aug-23-2001	67	24.2	3,230
Aug-24-2001	70	24.8	3,270
Aug-25-2001	73	25.2	3,650
Aug-26-2001	67	25.9	3,560
Aug-27-2001	67	26.2	3,330
Aug-28-2001	68	26.5	3,310
Aug-29-2001	63	26.2	3,520
Aug-30-2001	65	24.9	3,940
Aug-31-2001	62	24.3	4,060

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), August 2001.

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-01-2001	189	25.6	973
Aug-02-2001	173	25.6	1,040
Aug-03-2001	158	25.6	1,100
Aug-04-2001	161	25.5	1,070
Aug-05-2001	172	25.5	1,030
Aug-06-2001	165	25.8	1,070
Aug-07-2001	157	26.7	1,070
Aug-08-2001	125	27.9	1,170
Aug-09-2001	114	27.6	1,230
Aug-10-2001	110	26.2	1,240
Aug-11-2001	106	25.4	1,280
Aug-12-2001	125	25.4	1,170
Aug-13-2001	129	24.7	1,190
Aug-14-2001	139	24.5	1,140
Aug-15-2001	139	25.1	1,120
Aug-16-2001	147	25.6	1,120
Aug-17-2001	182	26.0	1,070
Aug-18-2001	197	26.2	1,020
Aug-19-2001	205	26.0	1,010
Aug-20-2001	212	25.1	972
Aug-21-2001	215	23.6	957
Aug-22-2001	205	23.3	1,010
Aug-23-2001	197	23.7	1,020
Aug-24-2001	189	24.5	1,050
Aug-25-2001	194	24.9	1,020
Aug-26-2001	189	25.5	1,040
Aug-27-2001	175	25.9	1,070
Aug-28-2001	140	26.2	1,120
Aug-29-2001	95	25.8	1,310
Aug-30-2001	78	23.9	1,430
Aug-31-2001	74	23.4	1,480

Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), August 2001.

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-01-2001	497	26.0	NA	NA
Aug-02-2001	483	25.7	NA	NA
Aug-03-2001	489	25.2	NA	NA
Aug-04-2001	505	24.8	NA	NA
Aug-05-2001	513	24.8	NA	NA
Aug-06-2001	526	25.2	NA	NA
Aug-07-2001	465	26.1	NA	NA
Aug-08-2001	381	27.3	NA	NA
Aug-09-2001	383	27.1	NA	NA
Aug-10-2001	390	25.6	1,550	4.5
Aug-11-2001	398	24.9	1,470	3.9
Aug-12-2001	428	24.7	1,440	3.1
Aug-13-2001	458	24.0	1,370	2.7
Aug-14-2001	482	24.2	1,260	3.0
Aug-15-2001	427	24.9	1,330	3.6
Aug-16-2001	414	25.1	1,370	3.2
Aug-17-2001	421	25.6	1,470	4.1
Aug-18-2001	471	25.6	1,380	3.9
Aug-19-2001	495	25.7	1,260	3.2
Aug-20-2001	534	25.2	1,180	2.8
Aug-21-2001	453	24.7	1,210	3.0
Aug-22-2001	437	NA	1,260	3.3
Aug-23-2001	490	NA	1,250	3.4
Aug-24-2001	521	NA	1,230	NA
Aug-25-2001	500	NA	1,220	3.4
Aug-26-2001	491	25.1	1,330	4.2
Aug-27-2001	498	25.6	1,360	4.3
Aug-28-2001	486	25.9	1,260	3.4
Aug-29-2001	401	26.1	1,360	4.2
Aug-30-2001	351	24.9	NA	NA
Aug-31-2001	348	24.4	NA	NA

PRELIMINARY RESULTS

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

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-06-2001	54	.	.	4,810	81	Selenium and boron analyses		
Jun-13-2001	49	.	.	NA	NA	from weekly grab		
Jun-20-2001	49	.	.	4,230	240	discontinued 2/1/00.		
Jun-27-2001	52	.	.	4,560	230	.	.	.
Jul-03-2001	59	.	.	4,070	260	.	.	.
Jul-11-2001	60	.	.	4,040	140	.	.	.
Jul-18-2001	59	.	.	4,460	97	.	.	.
Jul-25-2001	53	.	.	4,330	72	.	.	.
Aug-01-2001	59	.	.	3,930	100	.	.	.
Aug-08-2001	56	.	.	3,320	170	.	.	.
Aug-15-2001	61	.	.	3,480	130	.	.	.
Aug-22-2001	48	.	.	3,590	95	.	.	.
Aug-29-2001	53	.	.	4,370	85	.	.	.

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

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-05-2001	55	.	.	4,600	.	49.8	.	7.6
Jun-12-2001	54	.	.	4,700	.	51.4	.	7.5
Jun-19-2001	50	.	.	4,780	.	47.4	.	8.0
Jun-26-2001	50	.	.	4,330	.	48.2	.	7.3
Jul-02-2001	60	.	.	4,140	.	44.4	.	7.0
Jul-09-2001	62	.	.	3,960	.	41.7	.	6.8
Jul-17-2001	64	.	.	4,230	.	42.6	.	6.8
Jul-24-2001	54	.	.	4,390	.	45.7	.	6.8
Jul-31-2001	56	.	.	4,050	.	41.8	.	6.9
Aug-07-2001	59	.	.	3,760	.	34.3	.	6.1
Aug-14-2001	57	.	.	NA	.	30.4	.	5.8
Aug-21-2001	52	.	.	3,750	.	36.6	.	6.0
Aug-28-2001	49	.	.	4,070	.	48.2	.	6.0

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-07-2001	56	27.8	8.5	4,860	40	51.3	Selenium	7.9
Jun-14-2001	51	21.1	8.4	4,460	51	49.1	(dissolved)	7.2
Jun-21-2001	49	37.2	8.4	4,720	NA	53.3	analyses	7.3
Jun-28-2001	54	24.1	8.4	4,280	35	43.5	discontinued	7.4
Jul-05-2001	59	26.4	8.2	4,200	34	48.7	1/15/2000.	7.0
Jul-11-2001	58	25.4	8.3	3,770	41	37.3	.	6.6
Jul-19-2001	59	24.7	8.4	4,420	44	45.4	.	6.9
Jul-26-2001	53	24.9	8.2	4,440	44	48.9	.	6.9
Aug-02-2001	59	24.8	8.3	3,830	50	37.6	.	6.7
Aug-09-2001	56	26.7	8.3	3,550	41	32.4	.	6.0
Aug-16-2001	61	24.8	8.4	3,770	39	32.7	.	6.2
Aug-23-2001	50	22.7	8.4	3,650	32	42.3	.	5.7
Aug-30-2001	54	24.0	8.4	4,260	58	53.1	.	5.9

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-07-2001	21	28.1	8.3	1,720	1.3	1.5
Jun-14-2001	7	23.1	8.1	3,270	1.1	2.4
Jun-21-2001	9	34.0	8.4	2,690	0.6	2.0
Jun-28-2001	8	29.3	8.5	2,570	0.5	1.9
Jul-05-2001	17	25.7	7.8	1,670	1.1	1.4
Jul-11-2001	13	28.1	8.2	2,350	0.7	1.9
Jul-19-2001	14	29.2	8.3	2,790	0.5	2.0
Jul-26-2001	10	23.1	7.9	2,200	0.5	1.9
Aug-02-2001	8	24.4	8.3	2,000	0.6	1.7
Aug-09-2001	8	23.2	7.9	3,170	0.4	2.6
Aug-16-2001	6	25.6	8.0	1,390	0.7	1.2
Aug-23-2001	17	22.7	8.1	812	0.7	0.9
Aug-30-2001	11	23.3	7.7	1,430	<0.4	0.9

++ 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-07-2001	77	27.0	8.4	3,930	33.7	5.6
Jun-14-2001	58	21.6	8.3	4,560	48.2	6.9
Jun-21-2001	58	31.9	8.3	4,570	40.8	6.8
Jun-28-2001	62	24.8	8.4	4,190	41.7	6.4
Jul-05-2001	76	26.0	8.0	3,550	33.7	5.6
Jul-11-2001	71	25.6	8.3	3,750	34.6	6.1
Jul-19-2001	73	25.7	8.3	4,190	42.0	6.5
Jul-26-2001	63	24.7	8.2	4,160	41.7	6.1
Aug-02-2001	67	25.0	8.4	2,170	34.0	6.1
Aug-09-2001	64	26.5	8.4	3,370	27.6	5.3
Aug-16-2001	67	25.0	8.4	3,420	30.5	5.3
Aug-23-2001	67	22.5	8.3	3,100	29.5	4.5
Aug-30-2001	65	24.3	8.3	3,820	43.2	5.2

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-07-2001	145	25.1	7.8	1,290	0.7	P
Jun-14-2001	162	20.8	7.8	1,270	1.6	P
Jun-21-2001	177	29.6	7.3	1,110	0.7	P
Jun-28-2001	191	24.0	7.8	1,040	0.7	P
Jul-05-2001	128	24.5	7.8	1,340	0.7	0.6
Jul-11-2001	191	23.9	7.8	975	0.8	0.5
Jul-19-2001	195	24.2	7.9	1,100	0.7	0.6
Jul-26-2001	188	27.6	7.1	1,000	<0.4	0.5
Aug-02-2001	173	23.9	7.9	999	0.5	P
Aug-09-2001	114	25.9	7.6	1,210	0.5	P
Aug-16-2001	147	24.1	7.5	1,080	0.4	P
Aug-23-2001	197	22.1	7.7	1,030	0.9	P
Aug-30-2001	78	25.8	8.3	1,430	<0.4	P

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-07-2001	.	23.1	7.9	1,410	0.6	0.5
Jun-14-2001	.	22.2	7.8	1,490	1.3	0.6
Jun-21-2001	.	28.0	7.8	1,250	0.7	0.5
Jun-28-2001	.	26.0	8.1	1,020	0.6	0.4
Jul-05-2001	.	25.3	7.6	1,550	0.6	0.6
Jul-11-2001	.	24.6	7.7	1,180	0.7	0.5
Jul-19-2001	.	23.7	7.8	1,180	0.6	0.6
Jul-26-2001	.	24.7	7.7	1,230	<0.4	0.6
Aug-02-2001	.	26.6	7.6	1,050	0.4	0.4
Aug-09-2001	.	26.4	7.7	1,320	0.6	0.5
Aug-16-2001	.	23.3	7.7	1,170	0.4	0.4
Aug-23-2001	.	22.2	7.7	1,100	0.5	0.4
Aug-30-2001	.	22.2	7.4	1,580	<0.4	0.5

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

(Collected data intended for use with biological monitoring.)

See Table 26 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-05-2001	.	.	.	1,860	9.6	1.8
Jun-12-2001	.	.	.	2,570	12.4	2.6
Jun-19-2001	.	.	.	2,020	9.3	1.8
Jun-28-2001	.	.	.	1,740	8.4	1.7
Jul-06-2001	.	.	.	2,080	9.2	2.1
Jul-10-2001	.	.	.	1,960	10.0	2.0
Jul-17-2001	.	.	.	1,900	8.3	1.9
Jul-24-2001	.	.	.	1,750	8.9	1.7
Jul-31-2001	.	.	.	1,720	8.2	1.7
Aug-07-2001	.	.	.	1,950	9.9	2.1
Aug-14-2001	.	.	.	1,990	8.7	1.8
Aug-21-2001	.	.	.	1,700	7.1	1.6
Aug-28-2001	.	.	.	1,780	8.7	1.5

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††	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jun-06-2001	20	.	.	613	1.3	0.4
Jun-13-2001	20	.	.	508	1.9	0.3
Jun-20-2001	20	.	.	516	1.9	0.4
Jun-27-2001	10	.	.	540	1.1	0.3
Jul-03-2001	10	.	.	499	1.3	0.3
Jul-11-2001	10	.	.	444	1.0	0.3
Jul-18-2001	4	.	.	547	1.4	0.6
Jul-25-2001	4	.	.	485	1.0	0.3
Aug-01-2001	0	.	.	505	1.1	0.3
Aug-08-2001	0	.	.	622	1.9	0.4
Aug-15-2001	6	.	.	690	1.7	0.5
Aug-22-2001	15	.	.	648	0.9	0.2
Aug-29-2001	25	.	.	632	0.9	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††	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jun-06-2001	20	.	.	640	1.2	0.4
Jun-13-2001	10	.	.	640	1.8	0.4
Jun-20-2001	25	.	.	505	1.0	0.3
Jun-27-2001	25	.	.	522	1.2	0.3
Jul-03-2001	25	.	.	534	1.2	0.3
Jul-11-2001	10	.	.	511	1.3	0.3
Jul-18-2001	10	.	.	475	1.0	0.3
Jul-25-2001	10	.	.	450	0.5	0.2
Aug-01-2001	10	.	.	467	0.8	0.2
Aug-08-2001	10	.	.	573	0.9	0.3
Aug-15-2001	10	.	.	634	0.8	0.3
Aug-22-2001	10	.	.	772	1.0	0.5
Aug-29-2001	80	.	.	653	0.6	0.2

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††	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jun-06-2001	70	.	.	886	1.2	0.7
Jun-13-2001	80	.	.	574	1.9	0.4
Jun-20-2001	90	.	.	699	1.2	0.5
Jun-27-2001	110	.	.	676	1.2	0.5
Jul-03-2001	80	.	.	752	1.5	0.5
Jul-11-2001	80	.	.	556	1.2	0.4
Jul-18-2001	40	.	.	828	1.4	0.7
Jul-25-2001	50	.	.	766	0.8	0.5
Aug-01-2001	40	.	.	701	1.0	0.5
Aug-08-2001	30	.	.	781	1.1	0.6
Aug-15-2001	50	.	.	713	1.0	0.4
Aug-22-2001	70	.	.	698	1.0	0.3
Aug-29-2001	90	.	.	754	0.8	0.4

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††	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jun-06-2001	18	.	.	1,310	1.6	1.5
Jun-13-2001	11	.	.	1,300	2.5	1.6
Jun-20-2001	16	.	.	1,380	1.7	1.7
Jun-27-2001	17	.	.	1,490	1.8	2.1
Jul-03-2001	53	.	.	1,410	2.1	2.0
Jul-11-2001	11	.	.	1,280	1.9	1.6
Jul-18-2001	45	.	.	1,350	1.6	1.9
Jul-25-2001	15	.	.	1,480	1.4	2.3
Aug-01-2001	37	.	.	1,260	1.4	2.1
Aug-08-2001	58	.	.	1,330	1.6	1.8
Aug-15-2001	46	.	.	1,530	1.8	2.4
Aug-22-2001	50	.	.	1,420	1.7	1.8
Aug-29-2001	3	.	.	1,240	1.3	0.8

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-07-2001	597	22.5	8.0	1,260	3.9	0.9
Jun-14-2001	486 e	21.0	8.0	1,400	5.6	1.1
Jun-21-2001	471 e	26.9	7.9	1,480	4.3	1.1
Jun-28-2001	532	22.5	7.8	1,250	4.2	1.0
Jul-05-2001	481	25.4	7.8	1,470	4.6	1.2
Jul-11-2001	489	24.3	7.6	1,370	5.3	1.1
Jul-19-2001	521	23.9	7.9	1,400	4.4	1.1
Jul-26-2001	507	24.9	7.9	1,320	3.5	1.1
Aug-02-2001	483	25.0	8.0	1,260	4.1	1.1
Aug-09-2001	383	26.1	8.1	1,390	3.7	1.1
Aug-16-2001	414	24.0	8.1	1,320	3.4	1.1
Aug-23-2001	490	22.5	8.0	1,130	2.7	0.8
Aug-30-2001	351	23.9	8.1	1,450	4.0	0.9

Table 18. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from September 2000 to August 2001. 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-2000	100	100	93	98	98	98
Oct-2000	100	75*	93	100	100	98
Nov-2000	88	15*	23*	63*	95	100
Dec-2000	100	63*	73	88	88	93
Jan-2001	95	85	93	90	100	100
Feb-2001	100	90	93	78	78	100
Mar-2001	100	93	93	90	95	100
Apr-2001	100	100	95	93	95	100
May-2001	88	97	90	90	90	100
Jun-2001	88	98	98	98	98	100
Jul-2001	90	93	98	100	93	98
Aug-2001	95	95	98	95	98	98

Table 19. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from September 2000 to August 2001. 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-2000	0.42	0.34	0.34	0.41	0.37	0.34
Oct-2000	0.66	0.46*	0.58*	0.67	0.68	0.58
Nov-2000	0.29	0.05*	0.07*	0.21*	0.28	0.31
Dec-2000	0.72	0.40*	0.49*	0.67	0.74	0.60
Jan-2001	0.63	0.50	0.59	0.55	0.62	0.57
Feb-2001	0.54*	0.53*	0.64	0.61	0.68	0.65
Mar-2001	0.61	0.66	0.67	0.63	0.64	0.60
Apr-2001	0.64	0.72	0.71	0.73	0.67	0.57
May-2001	0.45	0.45	0.46	0.43	0.45	0.46
Jun-2001	0.61*	0.83	0.85	0.85	0.74	0.65
Jul-2001	0.42	0.39	0.48	0.47	0.45	0.44
Aug-2001	0.43	0.44	0.35	0.38	0.36	0.36

Table 20. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from September 2000 to August 2001. 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-2000	90	90	90	100	100	100
Oct-2000	80	80	60*	80	80	70
Nov-2000	100	100	100	100	90	100
Dec-2000	100	80	80	100	100	60*
Jan-2001	90	70*	100	100	90	80
Feb-2001	100	100	90	100	90	100
Mar-2001	100	100	90	90	90	90
Apr-2001	100	100	100	100	89	89
May-2001	0‡‡	100	100	100	70	100
Jun-2001	50*	70	70	90	100	100
Jul-2001	100	100	60*	80	90	90
Aug-2001	50*	100	30*	100	90	90

Table 21. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from September 2000 to August 2001. 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-2000	42.4	38.9	39.9	41.6	48.7	31.8
Oct-2000	29.8	41.5	23.9	25.7	31.8	17.7
Nov-2000	45.7	40.4	43.9	35.1	22.8	26.3
Dec-2000	13.7	15.7	13.3	11.2	13.4	4.4*
Jan-2001	30.8	31.3	46.2	36.9	30.8	27.1
Feb-2001	31.2	25.7	25.1	29.9	27.2	27.5
Mar-2001	11.7	21.9	19.3	15.6	13.4	17.8
Apr-2001	30.7	28.6	36.5	26.2	24.9	24.8
May-2001	0‡‡	25.0	27.5	23.3	13.1	25.2
Jun-2001	18.9*	32.7*	36.6	47.9	44.5	36.4
Jul-2001	25.3	28.5	16.8	17.7	26.2	15.9
Aug-2001	11.7*	42.9	15.5*	52.5	27.1	36.3

Table 22. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from September 2000 to August 2001. 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	10^5 cells/mL	10^5 cells/mL	10^5 cells/mL	10^5 cells/mL	10^5 cells/mL	10^5 cells/mL
Sep-2000	9.4	11.5	10.8	13.7	10.8	9.6
Oct-2000	15.0	15.7	14.3	16.1	14.4	16.2
Nov-2000	8.3	7.5	8.1	7.6	7.7	7.9
Dec-2000	7.8*	13.6	15.4	14.9	13.1	13.3
Jan-2001	2.0	2.0	2.1	2.3 ‡	2.1 ‡	2.2
Feb-2001	11.3 ‡	23.8	21.5	16.7 ‡	22.5	17.6
Mar-2001	18.9	24.6	20.0	21.7	18.4	23.5
Apr-2001	9.9	10.5	10.2	5.8*	10.7	20.2
May-2001	10.1*5	18.4	13.1	19.6	15.5	14.5
Jun-2001	4.2*	12.9*	10.3*	14.7*	21.8	16.4
Jul-2001	8.3	8.5	8.5	9.4	8.0	9.1
Aug-2001	10.4*	12.4	3.0*	15.6	13.8	10.0

Table 23. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, June 2001 to August 2001.

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-11-2001	52	1.0	43	0.6	0.6
Jun-13-2001	53	0.5	53	0.7	<0.4
Jun-15-2001	55	0.5	53	0.5	0.5
Jul-09-2001	37	0.7	33	0.6	<0.4
Jul-11-2001	39	0.7	32	0.6	<0.4
Jul-13-2001	35	0.6	30	0.7	<0.4
Aug-13-2001	32	0.9	35	0.6	<0.4
Aug-15-2001	33	0.6	27	0.5	<0.4
Aug-17-2001	32	1.3	25	0.4	<0.4

Table 24. Summary of sulfate concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, June 2001 to August 2001.

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-11-2001	1,510	423	1,250	204	74
Jun-13-2001	1,450	640	1,400	187	37
Jun-15-2001	1,440	698	1,380	153	53
Jul-09-2001	1,150	529	1,100	134	28
Jul-11-2001	1,220	489	980	120	28
Jul-13-2001	1,300	583	1,110	115	26
Aug-13-2001	995	490	1,070	122	26
Aug-15-2001	1,050	691	1,010	113	28
Aug-17-2001	1,040	231	804	102	30

Table 25. Summary of total suspended solids concentrations in grab water samples collected from June 2001 to August 2001.

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-11-2001	54	27	60	376	3
Jun-13-2001	94	26	80	185	45
Jun-15-2001	50	20	87	144	35
Jul-09-2001	48	34	73	151	23
Jul-11-2001	96	32	71	217	42
Jul-13-2001	57	16	72	330	40
Aug-13-2001	51	41	53	142	22
Aug-15-2001	55	43	55	177	22
Aug-17-2001	62	107	88	230	24

Table 26. Explanations of footnotes and agency abbreviations.

Footnote	Explanation
CVRWQCB	California Regional Water Quality Control Board, Central Valley Region
SLDMWA	San Luis & Delta-Mendota Water Authority
USBR	U.S. Bureau of Reclamation
USGS	U.S. Geological Survey
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.
†	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 (10^6cell/mL) acceptability criteria.
‡	Control value exceeds suggested maximum variance (20%) acceptability criteria.
‡‡	Fungal growth observed on test organisms.
#	New testing laboratory with reporting limit of 0.4 µg/L as of June 1998.
5	Based on definitive bioassay, NOEC is 50 percent