

**Grassland Bypass Project
Interim Baseline Monitoring Program**

Monthly Data Report

November 2014

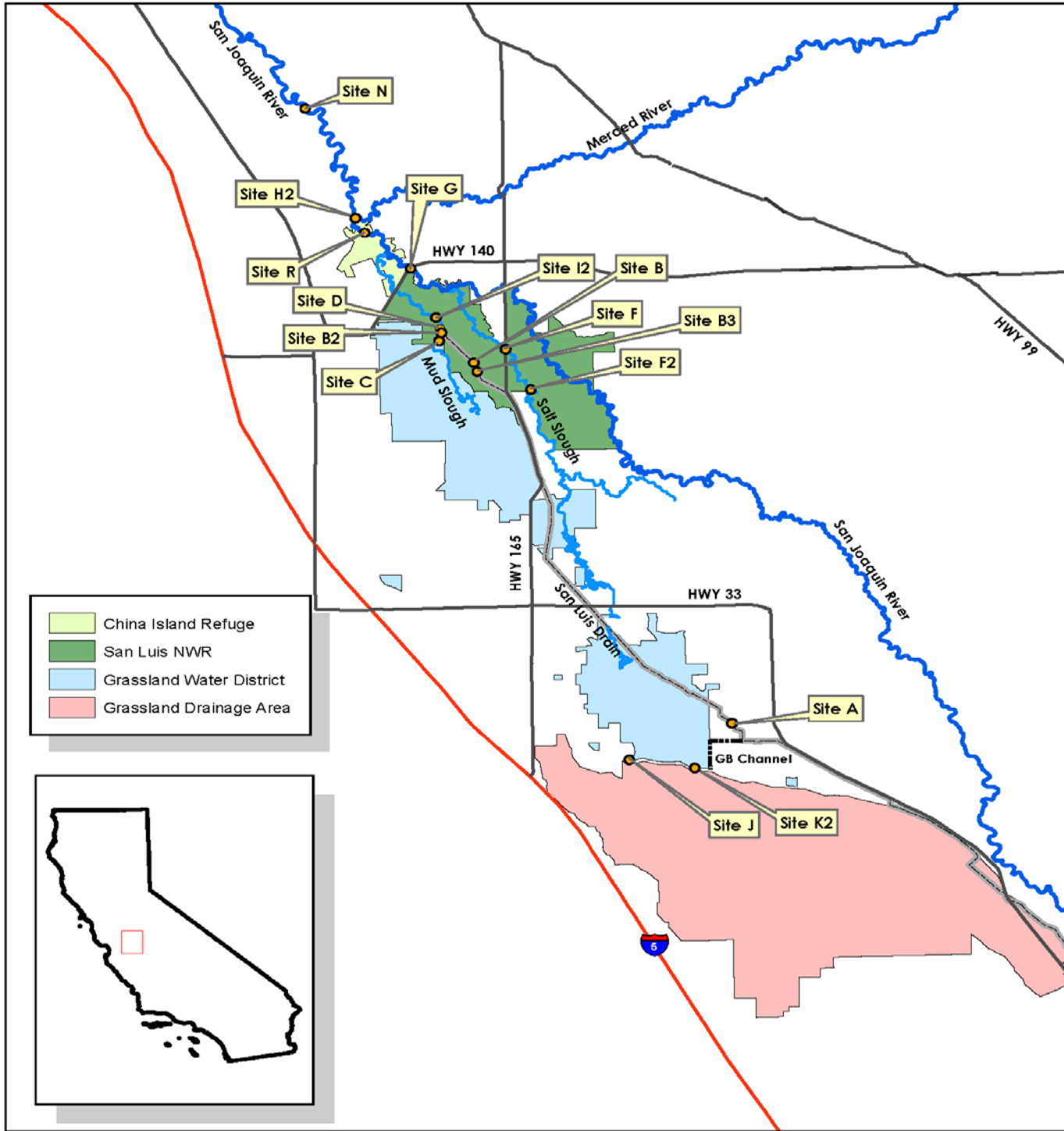


A Cooperative Effort Of:

U.S. Bureau of Reclamation
Central Valley Regional Water Quality Control Board
U.S. Fish and Wildlife Service
National Marine Fisheries Service
California Department of Fish and Wildlife
San Luis & Delta-Mendota Water Authority
U.S. Environmental Protection Agency
U.S. Geological Survey

Compiled by San Francisco Estuary Institute

Figure 1. Map of the Grassland Bypass Project area



Grassland Bypass Project

Monitoring Sites

0 2.5 5 10 Miles



Grassland Bypass Project
NAD 1983 California Zone 10
U.S. Bureau of Reclamation



**GRASSLAND BYPASS PROJECT
MONTHLY DATA REPORT**

LIST OF TABLES FOR MONTHLY REPORT

- Figure 1. Map of the 2014 Grasslands Bypass Monitoring Program
- Figure 2. Monthly selenium discharges from the terminus of the San Luis Drain into Mud Slough compared to load values.
- Table 1. Water monitoring of inflow to the San Luis Drain (Station A)
- Table 2a. Water monitoring of San Luis Drain Discharge into Mud Slough (north) (Station B2 and B3)
- Table 2b. Water quality monitoring at Station Be (discharge from San Luis Drain) (Station B3)
- Table 3a. Water monitoring in Mud Slough (north) below San Luis Drain discharge (Station D)
- Table 3b. Water quality monitoring in Mud Slough (north) below San Luis Drain Discharge (Station D)
- Table 4. Water quality monitoring in Mud Slough (north) above San Luis Drain Discharge (Station C)
- Table 5. Water quality monitoring in Mud Slough (north) backwater below San Luis Drain Discharge (Station I2)
- Table 6a. Water monitoring in Salt Slough at Highway 165 (Station F)
- Table 6b. Water quality monitoring in Salt Slough at Highway 165 (Station F)
- Table 7a. Water quality monitoring in Grasslands Wetland Water Supply Channels (Station J Camp 13 Ditch Headworks)
- Table 7b. Water quality monitoring in Grasslands Wetland Water Supply Channels (Station K Agatha Canal Headworks)
- Table 8a. Water monitoring in the San Joaquin River above the Merced River (Station H2)
- Table 9. Water quality monitoring in the San Joaquin River above Merced River at China Island Refuge (Station R)
- Table 10. Water monitoring in the San Joaquin River at Fremont Ford (Station G)
- Table 11a. Water monitoring in the San Joaquin River at Crows Landing (Station N)
- Table 11b. Water quality monitoring in the San Joaquin River at Crows Landing (Station N)
- Table 12. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests □
- Table 13. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests
- Table 14. Summary of *Daphnia magna* survival in 7-day tests using water samples
- Table 15. Summary of *Daphnia magna* reproduction in 7-day tests
- Table 16. Summary of *Selenastrum capricornutum* growth in 4-day tests
- Table 17. Summary of selenium concentrations in grab water samples collected at study stations for use in toxicity tests
- Table 18. Summary of total suspended solids concentrations in grab water samples
- Table 19. Explanation of footnotes and agency abbreviations

Grassland Bypass Project

Table 1a. Water monitoring of inflow to the San Luis Drain (Station A)

PARAMETER	Flow	Temperature	Specific Conductance	Total Dissolved Solids	Total Suspended Solids	Total Selenium	Daily Salt Load
DATA SOURCE	SLDMWA	SLDMWA	SLDMWA	Calculated	SLDMWA	SLDMWA/USBR	Calculated
UNITS	cfs	°C	µS/cm	mg/L	mg/L	µg/L	tons
Nov-01-2014	31	17.1	6,160	4,558		8	377
Nov-02-2014	38	16.4	6,160	4,555		8	469
Nov-03-2014	24	15.5	9,330	6,904		16	442
Nov-04-2014	22	15.7	10,400	7,722		16	452
Nov-05-2014	19	16.1	10,800	8,017		16	400
Nov-06-2014	17	16.3	10,700	7,920		16	369
Nov-07-2014	10	17.2	10,600	7,861		15	211
Nov-08-2014	0	17.2	11,000	8,106		15	1
Nov-09-2014	0	17.4	10,800	8,009		14	0
Nov-10-2014	1	17.0	10,600	7,874		14	30
Nov-11-2014	5	16.3	7,980	5,905		15	74
Nov-12-2014	1	16.6	6,640	4,915		14	18
Nov-13-2014	0	16.4	6,850	5,069		15	0
Nov-14-2014	0	17.0	6,950	5,146		15	0
Nov-15-2014	0	15.4	6,770	5,010		13	0
Nov-16-2014	0	13.3	6,740	4,991		13	0
Nov-17-2014	0	12.8	6,770	5,008		14	0
Nov-18-2014	0	11.7	6,720	4,974		14	0
Nov-19-2014	0	12.9	6,550	4,848		14	0
Nov-20-2014	0	13.4	6,550	4,844		14	0
Nov-21-2014	3	13.3	6,410	4,744		14	31
Nov-22-2014	10	13.4	6,490	4,804		14	130
Nov-23-2014	3	12.9	6,570	4,861		14	43
Nov-24-2014	4	12.3	6,630	4,906		16	50
Nov-25-2014	3	11.9	6,760	5,001		16	42
Nov-26-2014	2	11.8	6,760	5,001		15	28
Nov-27-2014	5	12.5	6,640	4,911		15	64
Nov-28-2014	8	12.5	6,540	4,841		15	106
Nov-29-2014	9	12.6	6,730	4,980		15	114
Nov-30-2014	15	13.0	6,620	4,902		15	194

Notes:

See Table 19 for explanation of footnotes and agency abbreviations.

Preliminary Results

Site A Selenium data are not collected by Reclamation and have been deemed unreliable by Reclamation Staff.

Table 1b. Monthly Averages and Totals

	Total Flow	Average Temperature	Average Specific Conductance	Average Total Dissolved Solids	Average Total Suspended Solids	Average Selenium	Salt Load	Salt Load Objective
	Calculated	Calculated	Calculated	Calculated	Calculated	Calculated	Calculated	UA3
	acre-feet	°C	µS/cm	mg/L	mg/L	µg/L	tons	tons
Jan-2014	650	9.8	7,320	5,418	46	26	4,620	4,283
Feb-2014	1,040	13.6	6,860	5,074	136	31	6,930	6,779
Mar-2014	600	17.3	7,190	5,323	96	27	3,990	8,031
Apr-2014	360	18.3	7,950	5,112	134	30	1,870	5,910
May-2014	280	21.9	6,200	4,589	97	36	1,690	5,792
Jun-2014	430	24.0	7,000	5,179	154	29.6	2,970	5,991
Jul-2014	280	26.1	6,860	5,079	128	27.5	1,980	6,055
Aug-2014	15	25.1	6,810	3,037	87	13.5	120	5,373
Sep-2014	10	23.2	7,910	5,854	59	9.1	40	2,838
Oct-2014	10	18.9	9,160	6,779		8.5	80	2,180
Nov-2014	230	14.6	7,710	5,706		14.3	3,640	2,265
Cumulative Total	3,905						27,930	55,497

Notes:

Salt load objective based on 2014 critical year type

Table 2a. Water monitoring of San Luis Drain Discharge into Mud Slough (north)
Station B2 (Terminus at Mud Slough) and Station B3 (Gun Club Road)

PARAMETER	Flow (B2)	Temperature (B2)	Specific Conductance (B2)	Total Suspended Solids (B2)	Boron (B3)	Total Selenium (B3)	Daily Selenium Load
DATA SOURCE	SLDMWA♦	SLDMWA	SLDMWA	SLDMWA/USBR	USBR	USBR	Calculated
UNITS	cfs	°C	µS/cm	mg/L	mg/L	µg/L	lbs
Nov-01-2014	5	14.4	12,900		24.0	11.6	0.3
Nov-02-2014	27	12.5	10,800		18.0	9.1	1.3
Nov-03-2014	43	12.8	6,390	104	12.0	7.6	1.8
Nov-04-2014	30	13.5	5,990		18.0	14.2	2.3
Nov-05-2014	22	14.8	7,320		16.0	15.4	1.8
Nov-06-2014	17	15.9	6,870		15.0	22.0	2.0
Nov-07-2014	15	16.6	6,980		16.0	21.0	1.7
Nov-08-2014	13	16.8	7,530		23.0	16.7	1.2
Nov-09-2014	7	16.9	9,350		25.0	15.8	0.6
Nov-10-2014	6	16.6	10,400	67	26.0	15.6	0.5
Nov-11-2014	5	15.0	10,600		27.0	15.9	0.4
Nov-12-2014	5	16.8	10,700		26.0	15.6	0.4
Nov-13-2014	6	15.4	11,000		28.0	15.3	0.5
Nov-14-2014	6	16.1	11,000		27.0	15.1	0.5
Nov-15-2014	6	14.3	11,200		30.0	14.5	0.4
Nov-16-2014	6	11.3	11,400		26.0	13.6	0.4
Nov-17-2014	6	10.9	11,600	51	28.0	12.2	0.4
Nov-18-2014	6	9.7	11,700		27.0	10.8	0.3
Nov-19-2014	6	13.4	11,800		27.0	10.1	0.3
Nov-20-2014	6	12.3	11,600		24.0	10.4	0.3
Nov-21-2014	6	12.8	11,400		28.0	10.4	0.3
Nov-22-2014	5	11.9	11,200			9.7	0.3
Nov-23-2014	7	12.7	11,100			9.1	0.3
Nov-24-2014	7	9.7	11,200			8.6	0.3
Nov-25-2014	6	10.6	11,000			8.1	0.3
Nov-26-2014	6	11.2	10,700			6.6	0.2
Nov-27-2014	6	12.1	10,600			6.1	0.2
Nov-28-2014	6	10.4	10,500			5.9	0.2
Nov-29-2014	8	10.6	10,500			5.1	0.2
Nov-30-2014	9	10.5	10,700			4.1	0.2

Notes:

See Table 19 for explanation of footnotes and agency abbreviations.
Preliminary Data

Table 2b. Monthly Averages and Totals

	Flow (B2)	Average Temperature (B2)	Average Specific Conductance (B2)	Average Total Suspended Solids	Average Boron (B3)	Average Selenium	Selenium Load	Selenium Load Objective
	Calculated	Calculated	Calculated	Calculated	Calculated	Calculated	Calculated	UA3
	acre-feet	°C	µS/cm	mg/L	mg/L	µg/L	lbs	lbs
Jan-2014	970	10.1	5,290	13	10.2	14.0	39	151
Feb-2014	1270	12.6	6,100	139	12.6	26.0	88	93
Mar-2014	900	15.0	5,980	50	11.8	20.8	63	92
Apr-2014	490	18.1	6,570	72	13.0	13.8	19	101
May-2014	400	22.1	6,740	46	12.8	13.6	17	105
Jun-2014	410	25.2	8,150	60	14.6	16.9	25	69
Jul-2014	180	28.1	9,710	28	19.1	11.3	11	70
Aug-2014	21	26.1	11,400	43	25.5	10.1	1	75
Sep-2014	10	24.1	14,200	66	29.3	11.7	1	57
Oct-2014	20	20.0	15,300	86	30.5	13.2	2	55
Nov-2014	300	13.3	10,200	74	23.4	11.9	20	55
Cumulative Load Totals	4,971						285	923

Notes:

Selenium load objective based on 2014 critical year type
Selenium Load is calculated using the monthly average flow weighted selenium concentration and flow in acre-feet.

Table 2c. Water quality monitoring at Station B3 (discharge from San Luis Drain)

PARAMETER	Physicals					Total Selenium	Total Boron	Total Molybdenum
	Dissolved Oxygen	pH	Specific Conductance	Temperature	Turbidity			
	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE			
UNITS	mg/L	units	µS/cm	°C	NTU	ug/L	mg/L	ug/L
Sep-04-2014	9.6	8.3	13,000	23.9	21.1	9	30	6.2
Sep-19-2014	10.3	8.1	12,300	23.5	56.7	7	27	
Sep-26-2014	12.4	8.2	12,200	21.7	83.3	8	27	
Oct-03-2014	11.8	8.2	12,400	20.1		9	28	
Oct-10-2014	9.5	9.5	14,300	22.1	47.0	9	38	
Oct-17-2014		8.1	12,100	20.1	135	15	29	
Oct-24-2014	9.8	7.9	11,400	16.9	79.6	11	29	
Oct-31-2014	9.2	8.4	9,910	18.6	75.7	12	20	9.0
Nov-07-2014	19.0	8.5	7,080	15.6	19.2	21	14	
Nov-14-2014	17.2	8.3	11,280	16.2	16.6	15	30	
Nov-21-2014	12.1	8.3	10,800	13.2	16.6	10	32	
Nov-28-2014	12.8	8.2	6,820	12.1	10.0	12	14	

Notes:

	Nutrients				
	Nitrates as N (Dissolved)	Ammonia as N	Total Kjeldahl Nitrogen	Total Phosphorous as P	Ortho-phosphate as P
	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE
UNITS	mg/L	mg/L	mg/L	mg/L	mg/L
Jan-09-2014	0.5	0.1	1.4	0.094 V	0.015 T
Feb-27-2014	3.7 T	0.2 L	1.7	0.095 T	<0.010
Mar-26-2014	<0.02	0.1	2.6	0.190 T	<0.010
Apr-25-2014					
May-08-2014	0.2	0.3	3.0	0.190 T	< 0.010
Jun-26-2014	4.8	1.1 U	3.5	0	< 0.050
Jul-31-2014	< 0.02	0.2 V	3.7	0.150	< 0.010
Aug-31-2014					
Sep-04-2014	< 0.05	0.1	3.9	0.130 T	< 0.010 T
Oct-31-2014	< 0.80	< 0.5	6.7 U	0.350 U	< 2.00
Nov-30-2014					

Notes:

Results of the Interim Monitoring Program Oct 2013 - Feb 2014

	General Minerals						
	Calcium	Magnesium	Potassium	Sodium	Chloride (Dissolved)	Sulfate (Dissolved)	Total Organic Carbon
	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE
UNITS	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Jan-09-2014	270	110	6.8	620	670	1,400	NA
Feb-27-2014	220	100	4.0	880	750	1,500	8.5

Notes:

	Total Metals								
	Arsenic	Boron	Cadmium	Copper	Lead	Mercury	Molybdenum	Nickel	Zinc
	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE
UNITS	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Jan-09-2014	5.5	9,000	<1.0	41	<2.5	100	31.0	17.0	<5.0
Feb-27-2014	<10		<1.0	<50	<2.5	<100	24.0	23.0	<10

Notes:

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

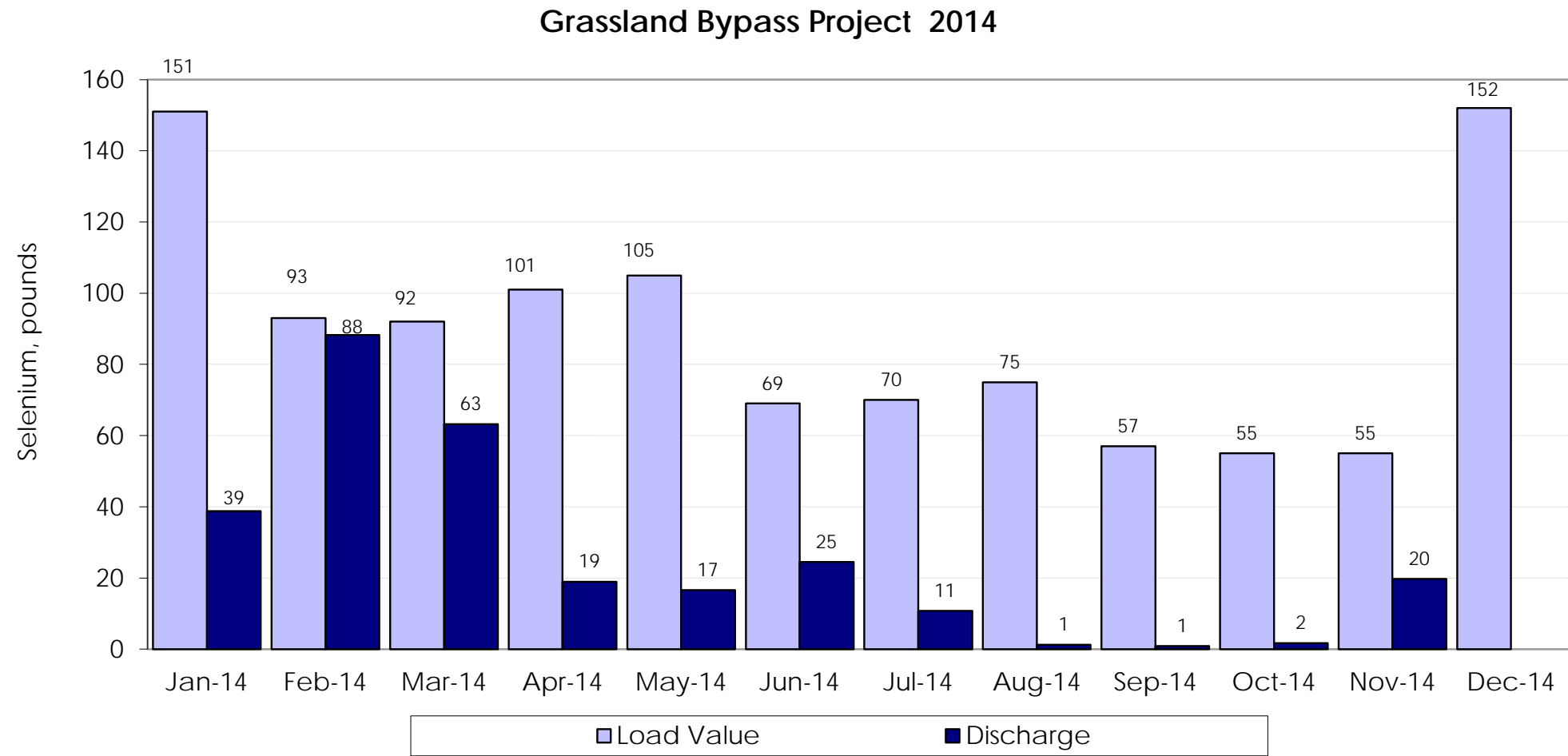


Table 3a. Water monitoring in Mud Slough (north) below San Luis Drain Discharge Station D

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	USGS	USGS	USGS
UNITS	cfs	°C	µS/cm
Nov-01-2014	12	16.5	5,010
Nov-02-2014	38	15.6	7,760
Nov-03-2014	70	15.6	5,640
Nov-04-2014	62	15.4	4,700
Nov-05-2014	47	15.7	5,440
Nov-06-2014	38	15.6	5,110
Nov-07-2014	38	16.1	4,690
Nov-08-2014	33	16.4	4,920
Nov-09-2014	20	16.5	4,880
Nov-10-2014	13	16.4	4,640
Nov-11-2014	11	16.0	4,370
Nov-12-2014	10	16.3	4,380
Nov-13-2014	11	16.6	5,240
Nov-14-2014	11	16.5	5,270
Nov-15-2014	12	15.7	4,820
Nov-16-2014	14	14.3	4,060
Nov-17-2014	14	13.0	4,230
Nov-18-2014	21	12.9	3,430
Nov-19-2014	19	13.4	3,700
Nov-20-2014	15	13.8	3,970
Nov-21-2014	14	13.7	3,880
Nov-22-2014	13	13.8	4,070
Nov-23-2014	16	13.1	4,880
Nov-24-2014	18	12.3	4,780
Nov-25-2014	17	12.0	4,300
Nov-26-2014	14	12.2	4,280
Nov-27-2014	13	12.3	4,060
Nov-28-2014	14	12.3	3,630
Nov-29-2014	19	12.3	3,560
Nov-30-2014	22	12.5	3,330

Notes:

See Table 19 for explanation of footnotes and agency abbreviations.
Preliminary Data

Table 3b. Monthly Averages

PARAMETER	Total Flow	Temperature	Specific Conductance
DATA SOURCE	Calculated	USGS	USGS
UNITS	acre-feet	°C	µS/cm
January	3,360	11	3,120
February	4,250	14	3,600
March	5,390	17	3,230
April	1,960	20	4,130
May	270	22	6,530
June	400	25	7,960
July	290	27	8,810
August	20	26	6,200
September	60	24	2,060
October	360	19	2,200
November	1,330	14	4,570
December			

Table 3c. Water quality monitoring in Mud Slough (north) below San Luis Drain discharge (Station D)

PARAMETER	Physicals					Total Selenium	Total Boron	Total Molybdenum
	Dissolved Oxygen	pH	Specific Conductance	Temperature	Turbidity			
	USBR	USBR	USBR	USBR	USBR			
DATA SOURCE	USBR	USBR	USBR	USBR	USBR	USBR	USBR	USBR
UNITS	mg/L	units	µS/cm	°C	NTU	ug/L	mg/L	ug/L
Sep-04-2014	10.0	8.2	7,150	24.5	22.7	3.5	14.0	11
Sep-19-2014	10.0	8.6	1,420	28.7	9.7	0.7	1.9	
Sep-26-2014	13.3	8.1	1,590	21.8	12.9	0.7	1.9	
Oct-03-2014	11.7	8.2	1,650	21.6		< 0.4	1.6	
Oct-10-2014	10.9	8.0	1,600	21.5	13.1	0.5	1.4	
Oct-17-2014		7.9	1,750	20.6	9.8	0.5	1.6	
Oct-24-2014	10.1	7.8	4,000	17.4	16.3	1.5	6.6	
Oct-31-2014	8.5	7.9	4,010	17.5	20.6	2.2	6.2	22
Nov-07-2014	10.6	8.3	4,770	16.1	20.9	12.4	8.2	
Nov-14-2014	8.9	8.1	5,510	16.5	23.3	5.4	10.0	
Nov-21-2014	7.7	7.9	3,950	13.6	13.8	2.5	6.5	
Nov-28-2014	9.1	7.8	3,780	12.1	9.2	1.9	6.0	

Notes:

	Nutrients				
	Nitrates as N (dissolved)	Ammonia as N	Total Kjeldahl Nitrogen	Total phosphorous as P	Ortho-phosphate as P
	USBR	USBR	USBR	USBR	USBR
	mg/L	mg/L	mg/L	mg/L	mg/L
Jan-09-2014	0.2	0.2	<5.0	0.12 V	0.046 T
Feb-27-2014	1.0 T	0.2 L	1.5	0.33 T	0.026
Mar-26-2014	0.02	0.2	2.5	0.62 T, U	0.220
Apr-25-2014					
May-08-2014	0.31	0.3	2.5	0.28 T	<0.010
Jun-26-2014	4.80 U	0.8 U	3.5 U	0.18	<0.050
Jul-31-2014	<0.02	0.2V	3.5 L, U	0.13	<0.010
Aug-31-2014					
Sep-04-2015	<0.02	0.1	2.6	0.20 T	<0.010 T
Oct-31-2014	<0.40	<0.5	1.6	0.46	<1.000
Nov-30-2014					

Notes:

Results of the Interim Monitoring Program Oct 2013 - Feb 2014

	General Minerals						
	Calcium	Magnesium	Potassium	Sodium	Chloride (dissolved)	Sulfate (dissolved)	Total Organic Carbon
	USBR	USBR	USBR	USBR	USBR	USBR	USBR
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Jan-09-2014	120	76	6.5	400	470	650	NA
Feb-27-2014	110	75	6.0	480	480	670	11.0

Notes:

	Total Metals						
	Arsenic	Cadmium	Copper	Lead	Mercury	Nickel	Zinc
	USBR	USBR	USBR	USBR	USBR	USBR	USBR
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Jan-09-2014	5.3	<1.0	29 L	<2.5	110	10.0	<5.0
Feb-27-2014	<5.0	<1.0	<50	<2.5	<100	16.0	<10

Notes:

Table 4. Water quality monitoring in Mud Slough (north) above the San Luis Drain (Station C)

	Physicals						
PARAMETER	Dissolved Oxygen	Specific Conductance	Turbidity	pH	Boron	Total Selenium	Molybdenum
DATA SOURCE	WSJRW	WSJRW	WSJRW	USBR	WSJRW	WSJRW	USBR
UNITS	mg/L	µS/cm	NTU	units	mg/L	µg/L	µg/L
Sep-04-2014							
Sep-19-2014							
Sep-26-2014							
Oct-03-2014							
Oct-10-2014	12.3	1,360	11	7.9	0.9	0.4	
Oct-17-2014	NA	1,670	37	7.9	1.1	< 0.4	
Oct-24-2014							
Oct-31-2014	9.8	2,130	11	7.9	1.6	< 0.4	25U
Nov-07-2014	8.2	1,746	20	7.9	1.2	0.4	
Nov-14-2014							
Nov-21-2014	10.7	2,150	10	7.6	1.4	< 0.4	
Nov-28-2014	62.0	1,120	12	7.4	1.6	0.4	

Notes:

- > Samples only collected when flow is sufficient.
- > No samples collected in September due to lack of sufficient flow

Table 5. Water quality monitoring in Mud Slough (north) backwater below San Luis Drain discharge (Station I2)

PARAMETER	Physicals					Total Selenium
	Dissolved Oxygen	pH	Specific Conductance	Temperature	Turbidity	
DATA SOURCE	USBR	USBR	USBR	USBR	USBR	USBR
UNITS	mg/L	units	µS/cm	°C	NTU	µg/L
Sep-04-2014						
Sep-19-2014						
Sep-26-2014						
Oct-03-2014						
Oct-10-2014						
Oct-17-2014						
Oct-24-2014						
Oct-31-2014						
Nov-07-2014						
Nov-14-2014						
Nov-21-2014						
Nov-28-2014						

Notes:

Samples collected only when site is flooded

Site was dry from September through November (no sample collected)

**Table 6a. Water monitoring in Salt Slough at Highway 165
Station F**

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	USGS	USGS	USGS
UNITS	cfs	°C	µS/cm
Nov-01-2014	34	16	1,670
Nov-02-2014	40	15.1	1,680
Nov-03-2014	49	14.5	1,570
Nov-04-2014	50	14.4	1,550
Nov-05-2014	45	14.7	1,500
Nov-06-2014	39	15.1	1,530
Nov-07-2014	35	15.6	1,600
Nov-08-2014	45	16.2	1,650
Nov-09-2014	46	16.4	1,630
Nov-10-2014	44	16.4	1,590
Nov-11-2014	46	15.8	1,620
Nov-12-2014	51	15.8	1,570
Nov-13-2014	55	16.1	1,520
Nov-14-2014	57	16	1,520
Nov-15-2014	57	15.5	1,530
Nov-16-2014	55	13.7	1,490
Nov-17-2014	53	12.9	1,490
Nov-18-2014	51	12.7	1,510
Nov-19-2014	52	12.8	1,520
Nov-20-2014	48	13.3	1,610
Nov-21-2014	45	13	1,640
Nov-22-2014	48	13.3	1,650
Nov-23-2014	49	12.8	1,690
Nov-24-2014	56	12.1	1,560
Nov-25-2014	69	11.8	1,510
Nov-26-2014	80	11.7	1,380
Nov-27-2014	81	11.9	1,430
Nov-28-2014	82	12	1,440
Nov-29-2014	77	11.8	1,420
Nov-30-2014	68	12.1	1,570

Notes:

See Table 19 for explanation of footnotes and agency abbreviations.
Preliminary Data

Table 6b. Monthly Averages

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	Calculated	USGS	USGS
UNITS	acre-feet	°C	µS/cm
January	4,820	17	1,760
February	3,800	14	1,960
March	4,600	17	2,170
April	5,480	20	1,820
May	2,810	23	1,640
June	1,900	25	1,360
July	1,790	27	1,050
August	1,880	26	923
September	1,620	24	1,100
October	1,190	23	1,200
November	3,190	14	1,560
December			

Table 6c. Water quality monitoring in Salt Slough at Highway 165 (Station F)

PARAMETER	Physicals					Total Selenium	Total Boron	Total Molybdenum
	Dissolved Oxygen	pH	Specific Conductance	Temperature	Turbidity			
	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE			
UNITS	mg/L	units	µS/cm	°C	NTU	ug/L	mg/L	ug/L
Sep-04-2014	9.8	7.4	858	24.2	71.0	< 0.4	0.4	5
Sep-19-2014	11.5	7.8	1,210	24.0	40.4	< 0.4	0.6	
Sep-26-2014	13.5	8.1	1,410	22.1	22.2	< 0.4	0.8	
Oct-10-2014	12.7	7.5	1,490	19.9	17.7	< 0.4	0.8	
Oct-17-2014		7.4	1,680	19.7	24.2	< 0.4	0.9	
Oct-24-2014	9.6	7.1	1,890	15.9	27.2	< 0.4	1.0	
Oct-31-2014	9.5	7.8	1,830	17.4	20.8	< 0.4	1.0	12
Nov-07-2014	9.3	7.1	1,720	18.3	25.5	< 0.4	0.9	
Nov-14-2014	10.1	7.6	1,590	17.4	26.1	< 0.4	0.8	
Nov-21-2014	10.0	7.7	1,650	16.0	19.1	< 0.4	0.9	
Nov-28-2014	10.3	7.6	1,460	14.2	25.6	< 0.4	0.7	

Notes:

	Nutrients				
	Nitrates as N (dissolved)	Ammonia as N	Total Kjeldahl Nitrogen	Total phosphorous	Ortho-phosphate as P
	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE
UNITS	mg/L	mg/L	mg/L	mg/L	mg/L
Jan-09-2014	<10	0.3	0.8	0.095 L,V	0.05 T
Feb-27-2014	1.3 T	0.3 L	1.0	0.320 T	<0.01
Mar-26-2014	0.8	0.1	1.0	0.290 T	0.06
Apr-25-2014					
May-08-2014	0.5	0.1	0.7	0.21 T	0.07
Jun-26-2014	0.5	< 0.5	0.5	0.26	0.09
Jul-31-2014	0.5	0.1 V	1.3	0.22	0.06
Aug-01-2014					
Sep-04-2015	0.1	0.1	0.9	0.28 T	0.05 T
Oct-31-2014	1.2	<0.5	0.7	0.44	<1.00
Nov-30-2014					

Notes:

Results of the Interim Monitoring Program Oct 2013 - Feb 2014

	General Minerals						
	Calcium	Magnesium	Potassium	Sodium	Chloride (dissolved)	Sulfate (dissolved)	Total Organic Carbon
	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE
UNITS	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Jan-09-2014	68	40	4.2	220	290	230	NA
Feb-27-2014	85	53	4.6	310	360	280	5.4

Notes:

	Total Metals							
	Arsenic	Cadmium	Copper	Lead	Mercury	Molybdenum	Nickel	Zinc
	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE	DATA SOURCE
UNITS	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Jan-09-2014	<5.0	<1.0	18	<2.5	110	9.4	<10	5.3
Feb-27-2014	<5.0	<1.0	<50	<2.5	<100	12.0	11	<10

Notes:

**Table 7a. Water quality monitoring in Grasslands Wetlands Water Supply Channels
Station J Camp 13 Ditch headworks**

PARAMETER	Flow	Specific Conductance	Temperature	Total Selenium
DATA SOURCE	GWD	USBR	GWD	USBR
UNITS	cfs	µS/cm	°C	µg/L
Sep-01-2014	<20			
Sep-08-2014	<20			
Sep-15-2014	<20			
Sep-22-2014	80	457	23.5	<0.4
Sep-29-2014	122	688	21.8	0.6
Oct-06-2014				
Oct-13-2014	196	681	21.1	<0.4
Oct-20-2014	137	754	20.4	0.5
Oct-27-2014	45	870	17.2	0.9
Nov-03-2014	95	807	16.6	0.6
Nov-10-2014	110	707	17.6	<0.4
Nov-17-2010				
Nov-24-2014	65	931	13.9	1.0

Notes:

Samples only collected when flow is passing site. Flow of less than 20 cfs does not reach Site C.
September: Flow <20 cfs (no sample collected)

**Table 7b. Water quality monitoring in Grasslands Wetlands Water Supply Channels
Station K2 Agatha Canal headworks**

PARAMETER	Flow	Specific Conductance	Temperature	Total Selenium
DATA SOURCE	GWD	USBR	GWD	USBR
UNITS	cfs	µS/cm	°C	µg/L
Sep-01-2014	<20			
Sep-08-2014	<20			
Sep-15-2014	<20			
Sep-22-2014	80	465	23.5	<0.4
Sep-29-2014	122	696	21.8	0.6
Oct-06-2014				
Oct-13-2014	196	695	21.1	0.4
Oct-20-2014	136	780	20.4	<0.4
Oct-27-2014	45	845	17.2	0.4
Nov-03-2014	95	819	16.6	0.5
Nov-10-2014	110	717	17.6	<0.4
Nov-17-2010				
Nov-24-2014	65	846	13.9	<0.4

Notes:

Samples only collected when flow is passing site. Flow of less than 20 cfs does not reach Site C.
September: Flow <20 cfs (no sample collected)

Table 8a. Water monitoring in the San Joaquin River above Merced River Station H2

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	USGS	USGS	USGS
UNITS	cfs	°C	µS/cm
Nov-01-2014	83	16.3	2,260
Nov-02-2014	70	15.2	2,210
Nov-03-2014	67	14.4	2,060
Nov-04-2014	70	14.1	2,160
Nov-05-2014	78	14.7	2,830
Nov-06-2014	81	15.1	2,470
Nov-07-2014	81	15.6	2,560
Nov-08-2014	79	16.0	2,660
Nov-09-2014	79	16.3	2,710
Nov-10-2014	81	16.3	2,470
Nov-11-2014	78	15.9	2,310
Nov-12-2014	76	16.2	2,190
Nov-13-2014	78	16.2	2,080
Nov-14-2014	81	16.3	1,960
Nov-15-2014	81	15.5	1,910
Nov-16-2014	79	13.7	1,980
Nov-17-2014	77	12.6	2,060
Nov-18-2014	76	11.9	2,060
Nov-19-2014	76	12.7	2,030
Nov-20-2014	75	13.3	2,070
Nov-21-2014	72	13.4	1,980
Nov-22-2014	70	13.5	2,100
Nov-23-2014	69	12.7	2,070
Nov-24-2014	67	11.9	2,060
Nov-25-2014	69	11.4	2,110
Nov-26-2014	76	11.4	2,160
Nov-27-2014	78	11.6	1,940
Nov-28-2014	80	11.5	1,840
Nov-29-2014	87	11.3	1,780
Nov-30-2014	94	11.6	1,710

Notes:

See Table 19 for explanation of footnotes and agency abbreviations.
Preliminary Data

Table 8b. Monthly Averages

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	Calculated	USGS	USGS
UNITS	acre-feet	°C	µS/cm
January	11,780	13	2,600
February	12,100	14	2,580
March	13,040	17	2,680
April	10,030	20	2,590
May	4,100	23	3,170
June	2,250	25	3,200
July	1,570	27	2,390
August	1,530	26	1,940
September	1,580	24	1,800
October	3,160	19	2,070
November	4,580	14	2,160
December			

Table 9. Water quality monitoring in the San Joaquin River above Merced River at China Island Refuge Station R

PARAMETER	Physicals					Total Selenium	Total Boron	Total Molybdenum
	Dissolved Oxygen	pH	Specific Conductance	Temperature	Turbidity			
DATA SOURCE	USBR	USBR	USBR	USBR	USBR	USBR	USBR	USBR
UNITS	mg/L	units	µS/cm	°C	NTU	ug/L	mg/L	ug/L
Sep-04-2014	9.5	8.2	1,280	25.8	25.3	< 0.4	0.5	7
Sep-19-2014								
Sep-26-2014								
Oct-03-2014								
Oct-10-2014	17.9	8.1	240	23.8	14.1	< 0.4	1.0	
Oct-17-2014		8.1	1,830	20.8	29.9	< 0.4	0.6	
Oct-24-2014								
Oct-31-2014	10.1	8.0	2,430	16.9	10.8	< 0.4	1.7	13
Nov-07-2014	14.3	8.5	2,830	16.5	22.9	3.1	3.5	
Nov-14-2014	9.5	7.9	1,920	16.7	47.1	0.7	1.6	
Nov-21-2014								
Nov-28-2014	11.3	7.9	1,960	12.0	22.3	0.6	1.8	

Notes:

	Nutrients				
	Nitrates as N (Dissolved)	Total ammonia	Total Kjeldahl Nitrogen	Total phosphorous	Ortho-phosphate as P
	USBR	USBR	USBR	USBR	USBR
	mg/L	mg/L	mg/L	mg/L	mg/L
Jan-09-2014	0.16	0.098	0.85	0.16V	0.054 T
Feb-27-2014					
Mar-26-2014	0.05	0.110	2.00	0.53 T	0.150
Apr-25-2014					
May-08-2014	<0.01	0.051	1.00	0.20 T	<0.010
Jun-26-2014	<1.00	<0.50	1.60	0.30	<0.050
Aug-01-2014					
Sep-04-2015	<0.01	0.08	0.78	0.17 T	0.052 T
Oct-31-2014	<0.40	<0.50	0.55	0.49	<1.00
Nov-30-2014					

Notes: No nutrients, general minerals or total minerals collected at Site R in February due to unsafe site conditions

Results of the Interim Monitoring Program Oct 2013 - Feb 2014

	General Minerals							
	Calcium	Magnesium	Potassium	Sodium	Chloride (Dissolved)	Sulfate (Dissolved)	Total Organic Carbon	Total Dissolved Solids
	USBR	USBR	USBR	USBR	USBR	USBR	USBR	USBR
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	Units	mg/L
Jan-09-2014	91	59	5.1	310	430	430	NA	NA
Feb-27-2014								

Notes: No nutrients, general minerals or total minerals collected at Site R in February due to unsafe site conditions

	Total Metals									
	Arsenic	Boron	Cadmium	Copper	Lead	Mercury	Molybdenum	Nickel	Zinc	
	USBR	USBR	USBR	USBR	USBR	USBR	USBR	USBR	USBR	
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	
Jan-09-2014	<5.0	1,800	<1.0	23	<2.5	<100	12	<10	<5.0	
Feb-27-2014										

Notes: No nutrients, general minerals or total minerals collected at Site R in February due to unsafe site conditions

Table 10a. Water monitoring in the San Joaquin River at Fremont Ford (Station G)

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	USGS	USGS	USGS
UNITS	cfs	°C	µS/cm
Nov-01-2014	38	16.4	1,900
Nov-02-2014	43	15.3	1,640
Nov-03-2014	49	14.6	1,560
Nov-04-2014	55	14.4	1,470
Nov-05-2014	56	14.8	1,450
Nov-06-2014	53	15.2	1,450
Nov-07-2014	50	15.6	1,540
Nov-08-2014	46	15.9	1,720
Nov-09-2014	53	16.2	1,620
Nov-10-2014	58	16.3	1,530
Nov-11-2014	60	16.0	1,450
Nov-12-2014	62	16.0	1,460
Nov-13-2014	66	16.2	1,480
Nov-14-2014	68	16.2	1,290
Nov-15-2014	71	15.5	1,250
Nov-16-2014	71	14.2	1,240
Nov-17-2014	70	13.1	1,230
Nov-18-2014	70	12.4	1,250
Nov-19-2014	69	13.0	1,280
Nov-20-2014	68	13.4	1,300
Nov-21-2014	65	14.5	1,450
Nov-22-2014	63	13.3	1,630
Nov-23-2014	63	12.7	1,660
Nov-24-2014	64	11.7	1,670
Nov-25-2014	70	11.4	1,550
Nov-26-2014	77	11.5	1,450
Nov-27-2014	83	11.7	1,360
Nov-28-2014	86	11.5	1,370
Nov-29-2014	89	11.5	1,360
Nov-30-2014	88	11.7	1,370

Notes:

See Table 19 for explanation of footnotes and agency abbreviations.
Preliminary Data

Table 10b. Monthly Averages

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	Calculated	USGS	USGS
UNITS	acre-feet	°C	µS/cm
January	6,310	10	1,990
February	6,040	14	2,150
March	6,900	17	2,270
April	6,670	20	2,230
May	2,770	23	2,310
June		25	2,040
July		27	1,580
August	2,020	26	1,220
September	1,810	24	1,670
October	1,840	19	1,960
November	3,820	14	1,470
December			

Table 11a. Water monitoring in the San Joaquin River at Crows Landing (Station N)

PARAMETER	Flow	Temperature	Specific Conductance	Total Selenium
DATA SOURCE	USGS	USGS	USGS	USBR
UNITS	cfs	°C	µS/cm	µg/L
Nov-01-2014	703	16.9	398	< 0.4
Nov-02-2014	569	16.1	425	< 0.4
Nov-03-2014	507	15.4	477	< 0.4
Nov-04-2014	471	15.1	511	< 0.4
Nov-05-2014	458	15.3	559	< 0.4
Nov-06-2014	455	15.5	736	0.7
Nov-07-2014	430	15.8	779	
Nov-08-2014	408	16.1	808	
Nov-09-2014	387	16.3	841	
Nov-10-2014	370	16.4	855	
Nov-11-2014	358	16.1	853	
Nov-12-2014	342	16.4	850	
Nov-13-2014	333	16.4	833	
Nov-14-2014	326	16.2	814	
Nov-15-2014	322	15.8	791	
Nov-16-2014	317	14.4	780	
Nov-17-2014	310	13.1	787	
Nov-18-2014	309	12.7	803	
Nov-19-2014	304	13.2	807	
Nov-20-2014	301	13.7	812	
Nov-21-2014	297	13.8	851	
Nov-22-2014	291	13.8	848	< 0.4
Nov-23-2014	285	13.2	872	< 0.4
Nov-24-2014	276	12.3	876	< 0.4
Nov-25-2014	270	12.0	895	< 0.4
Nov-26-2014	279	11.9	941	< 0.4
Nov-27-2014	284	12.1	978	< 0.4
Nov-28-2014	282	12.0	926	< 0.4
Nov-29-2014	289	11.9	905	< 0.4
Nov-30-2014	308	12.0	900	< 0.4

Notes:

Preliminary Data

11b. Monthly Averages

PARAMETER	Flow	Temperature	Specific Conductance	Selenium
DATA SOURCE	Calculated	Calculated	Calculated	Calculated
UNITS	acre-feet	°C	µS/cm	µg/L
January	22,200	10	1,620	0.7
February	22,450	13	1,760	1.3
March	22,480	17	2,180	1.1
April	11,060	20	1,710	0.5
May	21,700	17	2,110	1.1
June	6,040	25	1,880	0.8
July	4,200	27	1,700	0.8
August	4,080	25	1,500	0.6
September	5,560	24	1,320	0.5
October	14,580	19	1,170	0.4
November	21,500	14	784	0.7
December				

Table 11c. Water quality monitoring in the San Joaquin River at Crows Landing (Station N)

PARAMETER	Physicals					Selenium	Boron	Molybdenum
	Dissolved Oxygen	pH	Specific Conductance	Temperature	Turbidity			
DATA SOURCE	USBR	USBR	USBR	USBR	USBR	USBR	USBR	USBR
UNITS	mg/L	units	µS/cm	°C	NTU	µg/L	mg/L	mg/L
Aug-07-2014	7.1	7.7	1,700	25.8	21.7	0.6	0.9	
Sep-04-2014	9.4	7.8	1,310	24.4	15.4	< 0.4	0.5	5.6
Sep-19-2014	10.1	7.9	1,870	27.1	9.7	< 0.4	0.5	
Sep-26-2014	11.4	7.8	1,090	23.0	10.5	< 0.4	0.4	
Oct-03-2014	12.2	7.8	1,360	20.7		< 0.4	0.5	
Oct-10-2014	13.7	7.8	1,110	21.7	17.6	< 0.4	0.4	
Oct-17-2014		8.0	1,540	19.4	13.5	< 0.4	0.5	
Nov-07-2014	10.5	8.5	818	16.3	12.0	0.7	0.8	
Nov-14-2014	9.0	7.8	796	16.4	8.8	0.6	0.5	
Nov-21-2014	9.3	7.8	859	13.7	7.5	< 0.4	0.6	
Nov-28-2014	10.9	7.8	926	12.1	4.9	< 0.4	0.7	

Notes:

Table 12. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from March 2014 to March 2016. Each value is the mean of 4 replicates with 10 fish in each replicate.

See Table 19 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	%	%	%	%	%	%
Mar-2014	90	93	98	93	73 ^a	95
Jun-2014	95	98	88	98	95	95
Sep-2014	5*	95	98	88*	100	93
Dec-2014						
Mar-2015						
Jun-2015						
Sep-2015						
Mar-2016						

Table 13. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from March 2014 to March 2016. Each value is the mean of 4 replicates with 10 fish in each replicate.

See Table 19 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
Mar-2014	0.84	0.70	0.78	0.68	0.74	0.74
Jun-2014	0.67	0.62	0.75	0.83	0.62	0.67
Sep-2014	0.01*	0.65	0.58	0.63	0.61	0.58
Dec-2014						
Mar-2015						
Jun-2015						
Sep-2015						
Mar-2016						

Table 14. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from March 2014 to March 2016. Each value is the mean of 10 replicates with 1 animal in each replicate.

See Table 19 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	%	%	%	%	%	%
Mar-2014	100	90	100	100	100	100
Jun-2014	100	100	90	20*	90	80
Sep-2014	0*	100	100	100	100	100
Dec-2014						
Mar-2015						
Jun-2015						
Sep-2015						
Mar-2016						

Evaluation of the Toxicity of Grasslands Bypass Project Ambient Water Samples for the samples that were collected in September 2014.

Chronic Toxicity of Grasslands Bypass Project Ambient Water to *Selenastrum capricornutum*

There were significant reductions in algal growth in the Site B sample. However, it is important to note that there was also a significant reduction in algal growth in the conductivity control, which suggests that the elevated conductivity (ranging between 13,000-14,000 $\mu\text{S}/\text{cm}$) alone can cause a reduction in algal growth. There were no significant reductions in algal growth in any of the other Grasslands Bypass Project ambient water samples.

Chronic Toxicity of Grasslands Bypass Project Ambient Water to *Daphnia magna*

There was a significant reduction in *D. magna* survival and reproduction in the Site B sample. However, it is important to note that there were also significant reductions in survival and reproduction in the conductivity control, which suggests that the elevated conductivity (ranging between 13,000-14,000 $\mu\text{S}/\text{cm}$) alone can cause a reduction in *D. magna* survival and reproduction. There were no significant reductions in survival or reproduction in any of the other Grasslands Bypass Project ambient water samples.

Chronic Toxicity of Grasslands Bypass Project Ambient Water to Fathead Minnows

There were significant reductions in fathead minnow survival in the Site B and F samples. There was a significant reduction in growth in the site B sample. There were no significant reductions in survival or growth in any of the other Grasslands Bypass Project ambient water samples.

Table 15. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from March 2014 to March 2016. Each value is the mean of 10 replicates with 1 animal in each replicate.

See Table 19 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
Mar-2014	67.4*	72.3	86.9	88.8	85.0	82.9
Jun-2014	72.4	88.1	53.1*	41.7*	68.8	61.3
Sep-2014	0*	17.9	16.6	23.2	21.3	16.1
Dec-2014						
Mar-2015						
Jun-2015						
Sep-2015						
Mar-2016						

Table 16. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from March 2014 to March 2016. Each value is the mean of 4 replicates.

See Table 19 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
Mar-2014	4.2*	7.2	7.9	7.7 ^a	7.3	4.1
Jun-2014	2.2*		2.8*	5.4*	6.2	4.2
Sep-2014		5.5	4.8	6.0	4.9	2.8
Dec-2014						
Mar-2015						
Jun-2015						
Sep-2015						
Mar-2016						

Table 17. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests

See Table 19 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
17-Mar-14	18	< 0.8	1.3	0.5	< 0.4
19-Mar-14	18	< 0.8	1.5	0.5	< 0.4
21-Mar-14	18	< 0.8	1.7	0.4	< 0.4
9-Jun-14	16	< 0.8	7.2	< 0.4	< 0.4
11-Jun-14	15	< 0.8	3.3	< 0.4	< 0.4
13-Jun-14	15	< 0.8	11	< 0.4	< 0.4
15-Sep-14	8	< 0.4	< 0.8	< 0.4	< 0.4
17-Sep-14	8	< 0.4	< 0.8	< 0.4	< 0.4
19-Sep-14	10	< 0.4	< 0.8	< 0.4	< 0.4
Dec-2014					
Mar-2015					
Jun-2015					
Sep-2015					
Mar-2016					

Table 18. Summary of total suspended solids concentrations in grab water samples collected at study stations for use in laboratory toxicity tests

See Table 19 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
17-Mar-14	87 **	61	79	60	6.0
19-Mar-14	< 5.0 T,V **	69 T,V	62 T,V	62 T,V	5.8 T,V
21-Mar-14	46	64	59	58	6.0
9-Jun-14	50 T	58 T	31 T	24 T	<0.5 T
11-Jun-14	51 T	49	16 T	110	23.0
13-Jun-14	47	39	57	<0.5 T	<0.5 T
15-Sep-14	57 T	8.3 T	9.5 T	26 T	<0.5 T
17-Sep-14	95 T	<5.0 T	14 T	26 T	<0.5 T
19-Sep-14	36	7.0	6.0	34	<0.5
Dec-2014					
Mar-2015					
Jun-2015					
Sep-2015					
Mar-2016					

Table 19. Explanations of footnotes and agency abbreviations.

Agency	
CVRWQCB	California Regional Water Quality Control Board, Central Valley Region
GWD	Grasslands Water District
SLDMWA	San Luis & Delta-Mendota Water Authority
USBR	U.S. Bureau of Reclamation
USGS	U.S. Geological Survey
WSJRWC	Westside San Joaquin River Watershed Coalition (WSJRWC)
Water Quality Monitoring	
e	Estimated value
.	Not applicable
<	Less than MDL
D	Sample was dechlorinated
G	Data from records of the Grassland Water District.
H	Result may have high bias
J	Result is between the MDL and RL
L	Result may have low bias
MDL	Minimum detection level
	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
RL	Reporting level
T	Result obtained past the holding time
U	Result determined to be an outlier at the time of data validation
V	Result may vary excessively from the true value
UA3	Use Agreement for Continued Use of the San Luis Drain January 2010 - December 2019
Toxicity	
*	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.
†††	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.
v	Based on definitive bioassay, NOEC is 50 percent
a	The growth response for one of the replicates at this test treatment was determined