Appendix 8I
Mercury

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This appendix includes a description of the bioaccumulation models used in the mercury assessment, as well as figures and tables to support the assessment.

8I.1 Mercury Methodology

Mercury and methylmercury in water were modeled quantitatively for the Delta. A quantitative assessment utilizing a mass-balance approach (DSM2 fingerprinting data combined with historical source water quality data) was employed. Additionally, bioaccumulation models were used to convert methylmercury in the water to fish tissue concentrations. Section 8.3.1.3, the mercury discussion under section 8.3.1.7, and the discussion of the bioaccumulation models below provide more detailed information regarding the assessment methodology for boron and the details of the quantitative approach.

8I.1.1 Bioaccumulation Models Used for Predicting Mercury in Fish

The purpose of this bioaccumulation model is to provide an evaluation of the potential for the BDCP to affect concentrations of mercury in Delta water and potential for bioaccumulation in fish. Two bioaccumulation models to convert between water and fish tissue concentrations of mercury were used:

1. Linear regression between DSM2 output of methylmercury concentrations in water (modeled) and bass tissue mercury concentrations (measured) using either annual average or quarterly water values. This model was developed specifically for this analysis and is described in detail in the sections below.
2. The Central Valley Regional Water Quality Control Board (CVRWQCB) Total Maximum Daily Load (TMDL) model was based on the concentration averages of measured fish mercury and water concentrations of methylmercury over broad areas of the Delta. The CVRWQCB model was used in addition to the above described here as a separate predictive tool to link to DSM2 model output.

Both models can be used to estimate fish tissue mercury directly from waterborne methylmercury concentrations and, therefore, result in the same general pattern and relative magnitude of concentrations across BDCP Alternative conditions.

The CVRWQCB used the general approach of linking waterborne mercury concentrations and largemouth bass mercury concentrations for broad areas of the Delta as part of developing the Methylmercury TMDL (Wood 2010). The Regional Board modeling goal was to estimate water concentrations that would relate to their fish tissue TMDL target. However, for BDCP, it was desirable to determine the linkages between modeled mercury or methylmercury water concentrations and resulting fish tissue concentrations at specific defined locations, rather than general Delta conditions over broad areas. Thus, the linear regression model described in (1) above was developed. The intent of the regression was to establish a predictive tool for fish tissue mercury

based on DSM2 model estimates of waterborne methylmercury concentrations. The prediction was not assumed to be a measure of bass bioaccumulation physiology, but rather, a useful, predictive tool based on post-processing of DSM2 water concentration modeling for Alternatives evaluations.

Both the existing Regional Board model and the newly-developed model were used to convert DSM2 estimated methylmercury concentrations to predicted fish tissue mercury concentrations. The use of the two models shows a range of possible predicted fish tissue values as might be expected in the Delta as a result of project implementation. The benchmark used for evaluations to assess impacts of Alternatives was the CVRWQCB TMDL tissue concentration goal of 0.24 mg/kg wet weight (ww) of mercury for normalized 350-mm total length largemouth bass tissue (CVRWQCB 2011).

8I.1.2 Linear Regression of DSM2 Modeled Methylmercury to Measured Fish Tissue Mercury Model Development

As described above, a linear regression between DSM2 output of methylmercury concentrations in water (modeled) and bass tissue mercury concentrations (measured) was developed specifically for this analysis. Water concentrations were estimated by assigning mercury and methylmercury concentrations to five source waters (averaged over the 2000 to 2010 period) that contribute to the Delta (based on sampling data; see **Table I-1** and **I-2**), and using DSM2 to model the mixing and hydrodynamics of these contributing source waters in the system using historical year 2000 conditions. DSM2 was used to model year 2000 hydrologic conditions since fish tissue data were from 1999 and 2000, as discussed below. Mercury and methylmercury water sample data used to characterize the five source waters were each averaged over the years indicated in **Table I-1** to produce the long term averages used for source water blending.

The DSM2 model results provided an estimate of the resulting concentrations of mercury and methylmercury in water at specific locations (see **Table I-3**). Note that the first quarter DSM2 model results were discarded because the model "ramps up" for a new year and the average values from those first months were distinctly lower than for the other quarters. Ramping in water quality models is based on the use of previous months in the subsequent months' values and the use of unrealistically-low startup values. Therefore, a surrogate for the annual average for the year was computed from the last 3 quarters. The next step in the evaluation was to identify a model that linked these water concentrations to fish tissue concentrations in samples collected from the same location.

Largemouth bass were chosen for this analysis because they are popular sport fish, top predators, live for several years, and tend to stay in the same area (that is, they exhibit high site fidelity). Consequently, they are excellent indicators of long-term average mercury exposure, risk, and spatial pattern for both ecological and human health. Also a fish tissue mercury dataset was available for largemouth bass from defined locations across the Delta. The largemouth bass tissue mercury concentrations were presented as edible fillet concentrations for fish normalized to 350 mm in total length as supplied directly by SFEI (SFEI 2010). It is important to standardize concentrations to the same length fish at each location because of the well-established positive relationship between fish length and age and tissue mercury concentrations (Alpers et al. 2008). This same normalization technique was used by the Regional Board for their model (CVRWQCB 2011).

Standard, linear regression analyses were created using the SAS institute's Statview 5 analytic software (SAS 1998). DSM2 model outputs of mercury or methylmercury concentrations in water were graphed against fish tissue concentrations of total mercury (assumed to be all as methylmercury) at the exact same nodes and approximate dates. The data were log-transformed to improve normality. The positive relationships between fish tissue and waterborne mercury were not as strong as with waterborne methylmercury and therefore methylmercury was retained as the best predictor. The best fit for a predictive model was the linear regression with the transformed data between average waterborne methylmercury concentrations in water from the third quarter of the year and largemouth bass tissue mercury concentrations (**Figure A1**). Each point in the figure represents one fish sample paired with the DSM2 prediction of methylmercury concentrations from the nearest Delta location for that year. Although the explanation of variance is not strong, it is statistically significant, the third quarter data from the year 2000 produced the best fit. The regression equation (below) was used as the best identified predictor of mercury in fish tissue based on DSM2 modeled methylmercury water concentrations for period average concentrations.

Fish mercury (mg/kg ww) = 10^(4.217+ (Log methylmercury in water, µg/L × 1.164)) **[Eq.1]**

($r^2 = 0.383$, $P = 0.024$)

8I.1.3 Central Valley Regional Water Quality Control Board Model

The results of the regression model in **Figure A1** can be compared to those using the alternative from the CVRWQCB TMDL model, which also predicts 350-mm normalized largemouth bass fillets from methylmercury in water. This comparison is shown in **Table I-4**.

The CVRWQCB developed a nonlinear model based on largemouth bass as grouped in major, large areas of the Delta (rather than specific locations) compared to average methylmercury concentrations in water for those same, general areas (CVRWQCB 2011):

Fish mercury (mg/kg ww) = 20.365 × ((methylmercury in water, ng/L)^1.6374) **[Eq. 2]**

($r^2 = 0.910$, $P < 0.05$)

The difference between the model results and the actual fish tissue results were more variable for the CVRWQCB model, **Eq. 2** (-0.399 to 0.85 mg/kg ww) compared to the regression model of **Eq. 1** (-0.505 to 0.299 mg/kg ww) (**Table I-4**). It is possible the averaging used in the Regional Board model parameters contributed to this relative imprecision; in contrast, the DSM2 based model (**Eq. 1**) was specifically constructed to work for DSM2 output at our specific locations of interest. In addition, Note that the CVRWQCB TMDL model was not established to predict fish tissue concentrations, but to provide the linkage between the 0.24 mg/kg tissue mercury TMDL target to the waterborne goal of 0.066 ng methylmercury/L. Both model results are presented in recognition of the imprecision of predicting fish tissue concentrations from imprecise estimates of methylmercury concentrations as estimated for specific Delta locations. Results from the two tissue models provide a range of possible tissue concentrations as might be expected by location and Alternative.

8I.1.4 General Findings

Both models show exactly the same pattern of fish tissue mercury as compared among Alternatives and sites because both models are regression equations based on the same underlying estimates of waterborne methylmercury concentrations. Note that in the fish tissue chemistry estimate results presented in Tables I-7a,b to I-16a,b, all Eq. 2 results are uniformly higher than Eq.1 results. All measured fish tissue concentrations (Table I-4) and all Eq. 1 and Eq. 2 –based fish tissue mercury concentrations exceed the Regional Board TMDL target goal of 0.24 mg/kg tissue mercury. Nevertheless, clear patterns of differences among Alternatives are apparent in Tables I-7 to I-16. The highest estimated tissue mercury concentrations (from both equations) were for Alternative 8, North Bay Aqueduct at Barker Slough, all years (Table I-15a,b).

8I.1.5 References

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ABBREVIATIONS

BDAT	Bay Delta and Tributaries Project
µg/L	microgram(s) per liter
CVRWQCB	Central Valley Regional Water Quality Control Board
Hg	mercury
MeHg	methylmercury
mg/kg ww	milligrams/kilogram, wet weight
ng/L	nanogram(s) per liter
SFBRWQCB	San Francisco Bay Regional Water Quality Control Board
SFEI	San Francisco Estuary Institute
SWRCB	State Water Resources Control Board

1 **Table I-1. Historical Methylmercury Concentrations in the Five Delta Source Waters for the Period 2000–2008**

Data Parameters	Source Water									
	Sacramento River		San Joaquin River		San Francisco Bay		East Side Tributaries		Agriculture in the Delta	
	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Mean (ng/L)	0.10	0.03	0.15	0.03	0.032	–	0.22	0.08	0.25	–
Minimum (ng/L)	0.05	0.03	0.09	0.01	–	–	0.02	0.02	–	–
Maximum (ng/L)	0.24	0.03	0.26	0.08	–	–	0.32	0.41	–	–
75th Percentile (ng/L)	0.12	0.03	0.18	0.06	–	–	0.20	0.15	–	–
99th Percentile (ng/L)	0.23	0.03	0.26	0.08	–	–	0.31	0.39	–	–
Data Source	Central Valley Water Board 2008a		BDAT 2009; Central Valley Water Board 2008a		SFEI 2010	–	Central Valley Water Board 2008a		Central Valley Water Board 2008a	–
				USGS 2010				USGS 2010		
Station(s)	Sacramento River at Freeport		San Joaquin River at Vernalis		Martinez		Mokelumne and Calaveras Rivers		Mid-Delta locations, median	
Date Range	2000–2003	2000	2000–2001; 2003–2004	2000–2002	2007	–	2000–2001; 2003–2004	2000; 2002	2008	–
ND Replaced with RL	Not Applicable		Not Applicable	Yes	–		Yes		Not Applicable	
Data Omitted	None		None		–		None		None	
No. of Data Points	36	1	49	25	–	–	27	9	–	–

Sources: Bay Delta and Tributaries Project 2009; Central Valley Regional Water Quality Control Board 2008a; San Francisco Estuary Institute Website 2010; U.S. Geological Survey Website 2010.

Notes:

Means are geometric means. ng/L = nanograms per liter.

* The total recoverable concentration of the analyte is presented in first cell and the dissolved concentration of the analyte is presented in the second column.

2

1 **Table I-2. Historical Mercury Concentrations in the Five Delta Source Waters for the Period 1999 - 2008**

Data parameters	Source Water									
	Sacramento River		San Joaquin River		San Francisco Bay		East Side Tributaries		Agriculture within the Delta[b]	
	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Mean (ng/L)	4.1	—	7.6	0.8	7.8	—	8.6	1.4	6.5	—
Minimum (ng/L)	1.2	—	3.1	0.3		—	0.3	1.4	—	—
Maximum (ng/L)	30.6	—	21.7	3.0		—	26.2	1.4	—	—
75th Percentile (ng/L)	5.5	—	8.6	1.2		—	7.5	1.4	—	—
99th Percentile (ng/L)	24.2	—	17.4	2.8		—	25.2	1.4	—	—
Data Source	CVRWQCB 2008a	—	BDAT 2009; CVRWQCB 2008a	BDAT 2009; USGS 2010	SFEI 2010	—	CVRWQCB 2008a	USGS 2010	CVRWQCB 2008a	—
Station(s)	Sacramento River at Freeport		San Joaquin River at Vernalis		Martinez		Mokelumne and Calaveras Rivers[b,c]	Cosumnes River[d]	Mid-Delta locations, median	
Date Range	1999–2002	—	2000–2004	2000–2002	2007	—	2000–2001; 2003–2004	2002	2008	
ND Replaced with RL	Not Applicable		Not Applicable		—		Not Applicable	Not Applicable		
Data Omitted	None		None		—		None	None		
No. of Data Points	45	—	49	19	—	—	25	1	—	—

[b] Mokelumne River at I-5.
[c] Calaveras River at rail road upstream of West Lane.
[d] Cosumnes River at Michigan Bar.
Notes: Means are geometric means. ng/L: nanograms per liter.
Sources: Bay Delta and Tributaries Project (BDAT) 2009; CVRWQCB 2008a; SFEI Website 2010; USGS Website 2010

Table I-3. Modeled Mercury and Methylmercury Concentration Estimates in Water at Selected Locations in the Delta

DSM2 Output Location	Concentration (ng/L)							
	Second Quarter*		Third Quarter		Fourth Quarter		Annual Average	
	Hg	MeHg	Hg	MeHg	Hg	MeHg	Hg	MeHg
Sacramento River RM 44	4.1	0.1	4.1	0.1	4.1	0.1	4.1	0.1
Mokelumne River downstream of Cosumnes	8.56	0.22	8.45	0.22	8.55	0.22	8.52	0.22
Cosumnes River	8.6	0.22	8.6	0.22	8.6	0.22	8.6	0.22
Cache Slough	4.11	0.1	4.13	0.1	4.12	0.1	4.12	0.1
Sacramento River at Isleton	4.1	0.1	4.11	0.1	4.11	0.1	4.11	0.1
San Joaquin River Potato Slough	5.32	0.13	4.2	0.1	4.24	0.1	4.59	0.11
Sherman Island	4.79	0.11	4.5	0.1	4.75	0.09	4.68	0.1
White Slough downstream of Disappointment Slough	6.86	0.16	4.66	0.12	4.9	0.13	5.47	0.14
Franks Tract	5.46	0.13	4.26	0.11	4.29	0.1	4.67	0.11
Big Break	4.93	0.12	4.36	0.1	4.48	0.1	4.59	0.11
Mildred Island	6.99	0.15	4.61	0.12	5.09	0.12	5.56	0.13
San Joaquin River Naval Station	7.62	0.16	7.63	0.16	7.61	0.15	7.62	0.16

Table I-4. Comparison of Model Results to Measured Bass Fillet Mercury Concentrations

Site	Bass Tissue Mercury Concentration (mg /kg ww)				
	Measured in Fish Samples	Regression Model (Eq. 1)	Difference Regression - Measured	CVRWQCB TMDL Model (Eq. 2)	Difference CVRWQCB - Measured
Sacramento River RM 44	0.869	0.364	-0.505	0.47	-0.399
Mokelumne River downstream of Cosumnes	1.091	0.93	-0.161	1.758	0.667
Cosumnes River	0.895	0.926	0.031	1.745	0.85
Cache Slough	0.559	0.372	-0.187	0.484	-0.075
Sacramento River at Isleton	0.628	0.366	-0.262	0.473	-0.155
San Joaquin River Potato Slough	0.365	0.413	0.048	0.56	0.195
Sherman Island	0.323	0.371	0.048	0.482	0.159
White Slough downstream of Disappointment Slough	0.226	0.525	0.299	0.785	0.559
Franks Tract	0.265	0.42	0.155	0.574	0.309
Big Break	0.226	0.39	0.164	0.518	0.292
Mildred Island	0.226	0.498	0.272	0.729	0.503
San Joaquin River Naval Station	0.352	0.621	0.269	0.996	0.644
San Joaquin River Vernalis	0.739	0.583	-0.156	0.912	0.173
Geometric mean	**0.446**	**0.493**		**0.719**	
Maximum	**1.091**	**0.93**		**1.758**	
Minimum	**0.226**	**0.364**		**0.470**	

Note:

mg/kg ww = milligram per kilogram wet weight

1 **Table I-5. Modeled Mercury Concentrations in Water for Existing Conditions, No Action Alternative Late Long Term, and All Alternatives**

Location	Period *	Period Average Concentration (ng/L)													
		Existing Conditions	No Action Alternative-LLT	Alternative 1-LLT	Alternative 2-LLT	Alternative 3-LLT	Alternative 4-LLT H1	Alternative 4-LLT H2	Alternative 4-LLT H3	Alternative 4-LLT H4	Alternative 5-LLT	Alternative 6-LLT	Alternative 7-LLT	Alternative 8-LLT	Alternative 9-LLT
Delta Interior															
Mokelumne River (SF) at Staten Island	ALL	5.2	5.1	5.3	5.4	5.3	5.3	5.3	5.3	5.3	5.2	5.4	5.4	5.3	4.9
	DROUGHT	4.6	4.6	4.7	4.8	4.7	4.7	4.8	4.8	4.8	4.7	4.8	4.8	4.8	4.4
San Joaquin River at Buckley Cove	ALL	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.6	7.5	7.6	7.5	7.5	5.7
	DROUGHT	7.3	7.3	7.4	7.5	7.3	7.5	7.5	7.5	7.5	7.4	7.5	7.3	7.4	5.1
Franks Tract	ALL	4.9	4.9	5.1	5.3	5.0	5.2	5.2	5.3	5.3	5.1	5.9	5.6	5.7	6.3
	DROUGHT	4.4	4.5	4.5	4.7	4.5	4.6	4.6	4.6	4.7	4.6	5.2	5.1	5.1	5.8
Old River at Rock Slough	ALL	5.1	5.1	5.3	5.5	5.2	5.4	5.4	5.5	5.6	5.3	6.8	6.4	6.5	7.1
	DROUGHT	4.6	4.6	4.7	4.8	4.7	4.8	4.8	4.8	4.9	4.7	6.3	6.0	6.0	6.8
Western Delta															
Sacramento River at Emmaton	ALL	4.4	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.6	4.5	4.6	4.6
	DROUGHT	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.6	4.5	4.5	4.6
San Joaquin River at Antioch	ALL	5.1	5.0	5.2	5.2	5.2	5.2	5.3	5.2	5.2	5.1	5.4	5.3	5.3	5.4
	DROUGHT	4.9	4.9	4.9	5.0	4.9	4.9	5.0	4.9	5.0	4.9	5.1	5.0	5.0	5.2
Sacramento River at Mallard Island	ALL	5.7	5.6	5.8	5.7	5.7	5.8	5.8	5.7	5.7	5.7	5.8	5.7	5.7	5.8
	DROUGHT	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.8	5.8	5.8	6.1
Major Diversions (Pumping Stations)															
North Bay Aqueduct at Barker Slough Pumping Plant	ALL	4.3	4.3	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
	DROUGHT	4.3	4.3	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
Contra Costa Pumping Plant #1	ALL	5.1	5.1	5.3	5.5	5.2	5.4	5.4	5.5	5.5	5.2	6.9	6.4	6.5	7.1
	DROUGHT	4.7	4.7	4.7	4.9	4.7	4.8	4.9	4.9	5.0	4.8	6.5	6.1	6.1	6.8
Banks Pumping Plant	ALL	5.7	5.7	5.0	5.0	5.2	5.0	5.1	5.1	5.1	5.3	4.1	4.5	4.6	5.2
	DROUGHT	5.1	5.2	5.1	5.1	5.1	5.1	5.0	5.1	5.0	5.1	4.1	4.3	4.5	4.7
Jones Pumping Plant	ALL	6.2	6.3	5.6	5.3	5.8	5.5	5.5	5.5	5.4	5.9	4.1	4.6	4.6	5.2
	DROUGHT	5.9	6.0	5.8	5.5	5.7	5.7	5.5	5.6	5.5	5.8	4.1	4.4	4.4	4.7

* All: Water years 1975-1991 represent the 16-year period modeled using DSM2. Drought: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).
Notes:
LLT = late long term
ng/L = nanogram per liter
SF = south fork

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1 **Table I-6. Modeled Methyl Mercury Concentrations in Water for Existing Conditions, No Action Alternative Late Long Term, and All Alternatives**

Location	Period *	Period Average Concentration (ng/L)													
		Existing Conditions	No Action Alternative-LLT	Alternative 1-LLT	Alternative 2-LLT	Alternative 3-LLT	Alternative 4-LLT H1	Alternative 4-LLT H2	Alternative 4-LLT H3	Alternative 4-LLT H4	Alternative 5-LLT	Alternative 6-LLT	Alternative 7-LLT	Alternative 8-LLT	Alternative 9-LLT
Delta Interior															
Mokelumne River (SF) at Staten Island	ALL	0.135	0.134	0.142	0.143	0.140	0.142	0.142	0.142	0.142	0.139	0.146	0.143	0.143	0.127
	DROUGHT	0.121	0.121	0.126	0.127	0.126	0.126	0.127	0.127	0.127	0.126	0.130	0.128	0.127	0.115
San Joaquin River at Buckley Cove	ALL	0.159	0.164	0.162	0.160	0.162	0.160	0.160	0.160	0.160	0.161	0.161	0.161	0.161	0.145
	DROUGHT	0.161	0.167	0.167	0.163	0.167	0.163	0.163	0.163	0.163	0.165	0.165	0.164	0.165	0.138
Franks Tract	ALL	0.117	0.117	0.122	0.125	0.121	0.123	0.124	0.125	0.126	0.122	0.140	0.133	0.139	0.140
	DROUGHT	0.109	0.110	0.112	0.115	0.112	0.113	0.114	0.115	0.115	0.113	0.131	0.125	0.132	0.132
Old River at Rock Slough	ALL	0.121	0.122	0.126	0.130	0.126	0.127	0.129	0.130	0.132	0.126	0.155	0.145	0.149	0.154
	DROUGHT	0.113	0.116	0.118	0.121	0.117	0.119	0.120	0.121	0.122	0.118	0.153	0.142	0.147	0.154
Western Delta															
Sacramento River at Emmaton	ALL	0.103	0.103	0.103	0.104	0.102	0.103	0.104	0.104	0.104	0.103	0.109	0.106	0.168	0.103
	DROUGHT	0.101	0.101	0.100	0.101	0.100	0.100	0.101	0.101	0.101	0.100	0.106	0.104	0.132	0.101
San Joaquin River at Antioch	ALL	0.102	0.103	0.105	0.108	0.104	0.106	0.107	0.108	0.109	0.105	0.119	0.114	0.138	0.111
	DROUGHT	0.093	0.094	0.094	0.096	0.094	0.095	0.096	0.096	0.097	0.095	0.107	0.104	0.123	0.101
Sacramento River at Mallard Island	ALL	0.082	0.083	0.082	0.085	0.081	0.083	0.083	0.085	0.085	0.083	0.093	0.089	0.134	0.085
	DROUGHT	0.072	0.073	0.072	0.073	0.072	0.072	0.073	0.073	0.074	0.073	0.081	0.079	0.100	0.074
Major Diversions (Pumping Stations)															
North Bay Aqueduct at Barker Slough Pumping Plant	ALL	0.112	0.112	0.104	0.104	0.104	0.104	0.104	0.104	0.104	0.104	0.106	0.105	0.229	0.105
	DROUGHT	0.113	0.113	0.104	0.105	0.104	0.105	0.105	0.105	0.105	0.104	0.106	0.105	0.167	0.105
Contra Costa Pumping Plant #1	ALL	0.129	0.129	0.133	0.136	0.132	0.134	0.135	0.136	0.137	0.132	0.164	0.151	0.156	0.163
	DROUGHT	0.121	0.122	0.124	0.126	0.123	0.124	0.126	0.126	0.127	0.124	0.160	0.147	0.152	0.162
Banks Pumping Plant	ALL	0.133	0.135	0.122	0.121	0.126	0.123	0.124	0.123	0.123	0.128	0.100	0.110	0.114	0.125
	DROUGHT	0.128	0.131	0.128	0.128	0.128	0.128	0.125	0.128	0.125	0.129	0.100	0.108	0.116	0.119
Jones Pumping Plant	ALL	0.138	0.141	0.129	0.126	0.133	0.130	0.128	0.128	0.127	0.135	0.100	0.111	0.113	0.125
	DROUGHT	0.134	0.138	0.135	0.132	0.134	0.135	0.132	0.133	0.132	0.136	0.100	0.109	0.111	0.119

* All: Water years 1975-1991 represent the 16-year period modeled using DSM2. Drought: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).
Notes:
LLT = late long term
ng/L = nanogram per liter
SF = south fork

2

Table I-7a. Summary Table for Mercury Concentrations in 350 mm Largemouth Bass Fillets, and Comparisons to Benchmarks for Existing Conditions and No Action Alternative Late Long Term. Equation 1.

Location	Period [a]	Estimated Concentrations of Mercury (mg/kg, ww)		Exceedance Quotients[b]	
		EX	NAA-LLT	EX	NAA-LLT
Delta Interior					
Mokelumne River (South Fork) at Staten Island	All	0.516	0.510	2.15	2.12
	Drought	0.456	0.455	1.90	1.89
San Joaquin River at Buckley Cove	All	0.624	0.646	2.60	2.69
	Drought	0.635	0.662	2.65	2.76
Franks Tract	All	0.437	0.439	1.82	1.83
	Drought	0.400	0.406	1.67	1.69
Old River at Rock Slough	All	0.454	0.461	1.89	1.92
	Drought	0.420	0.432	1.75	1.80
Western Delta					
Sacramento River at Emmaton	All	0.375	0.377	1.56	1.57
	Drought	0.368	0.368	1.53	1.53
SJR at Antioch	All	0.374	0.377	1.56	1.57
	Drought	0.336	0.339	1.40	1.41
Sacramento River at Mallard Island	All	0.289	0.294	1.21	1.22
	Drought	0.249	0.253	1.04	1.05
Major Diversions (Pumping Stations)					
North Bay Aqueduct at Barker Slough PP	All	0.417	0.414	1.74	1.73
	Drought	0.420	0.419	1.75	1.75
Contra Costa Pumping Plant #1	All	0.488	0.488	2.03	2.04
	Drought	0.453	0.459	1.89	1.91
Banks Pumping Plant	All	0.507	0.515	2.11	2.15
	Drought	0.484	0.499	2.02	2.08
Jones Pumping Plant	All	0.531	0.544	2.21	2.26
	Drought	0.514	0.531	2.14	2.21

Notes:

[a] All: Water years 1975-1991 represent the 16-year period modeled using DSM2. Drought: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

[b] Exceedance Quotient - All concentrations exceed TMDL guidance concentration of 0.24 mg/kg ww Hg.

EX - Existing Conditions

mg/kg - milligram per kilogram

NAA-LLT - No Action Alternative Late Long Term

ww - wet weight

Table I-8b. Summary Table for Mercury Concentrations in 350 mm Largemouth Bass Fillets, and Comparisons to Benchmarks for Existing Conditions and No Action Alternative Late Long Term. Equation 2.

Location	Period [a]	Estimated Concentrations of Mercury (mg/kg, ww)		Exceedance Quotients[b]	
		EX	NAA-LLT	EX	NAA-LLT
Delta Interior					
Mokelumne River (South Fork) at Staten Island	All	0.77	0.75	3.2	3.1
	Drought	0.64	0.64	2.7	2.7
San Joaquin River at Buckley Cove	All	1.00	1.05	4.2	4.4
	Drought	1.03	1.09	4.3	4.5
Franks Tract	All	0.61	0.61	2.5	2.5
	Drought	0.54	0.55	2.2	2.3
Old River at Rock Slough	All	0.64	0.65	2.7	2.7
	Drought	0.57	0.60	2.4	2.5
Western Delta					
Sacramento River at Emmaton	All	0.49	0.49	2.0	2.1
	Drought	0.48	0.48	2.0	2.0
SJR at Antioch	All	0.49	0.49	2.0	2.1
	Drought	0.42	0.42	1.8	1.8
Sacramento River at Mallard Island	All	0.34	0.35	1.4	1.4
	Drought	0.28	0.28	1.1	1.2
Major Diversions (Pumping Stations)					
North Bay Aqueduct at Barker Slough PP	All	0.57	0.56	2.4	2.3
	Drought	0.57	0.57	2.4	2.4
Contra Costa Pumping Plant #1	All	0.71	0.71	3.0	3.0
	Drought	0.64	0.65	2.7	2.7
Banks Pumping Plant	All	0.75	0.77	3.1	3.2
	Drought	0.70	0.73	2.9	3.0
Jones Pumping Plant	All	0.80	0.83	3.3	3.4
	Drought	0.76	0.80	3.2	3.3

Notes:

[a] All: Water years 1975-1991 represent the 16-year period modeled using DSM2. Drought: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

[b] Exceedance Quotient - All concentrations exceed TMDL guidance concentration of 0.24 mg/kg ww Hg.

EX - Existing Conditions

mg/kg - milligram per kilogram

NAA-LLT - No Action Alternative Late Long Term

ww - wet weight

Table I-9a. Summary Table for Mercury Concentrations in 350 mm Largemouth Bass Fillets, and Comparisons to Baseline Conditions and Benchmark for Alternative 1. Concentrations presented as based on Equation 1.

Location	Period [a]	Estimated Concentrations of Mercury (mg/kg, ww)	% Change In Mercury Concentrations Compared to Baseline[b]		Exceedance Quotients[c]
		Alt. 1	EX	NAA-LLT	Alt. 1
Delta Interior					
Mokelumne River (South Fork) at Staten Island	All	0.55	6	7	2.3
	Drought	0.48	5	5	2.0
San Joaquin River at Buckley Cove	All	0.63	2	-1	2.7
	Drought	0.64	4	0	2.7
Franks Tract	All	0.46	5	4	1.9
	Drought	0.42	4	2	1.7
Old River at Rock Slough	All	0.48	5	3	2.0
	Drought	0.44	5	2	1.8
Western Delta					
Sacramento River at Emmaton	All	0.38	0	0	1.6
	Drought	0.37	-1	-1	1.5
SJR at Antioch	All	0.39	3	2	1.6
	Drought	0.34	1	0	1.4
Sacramento River at Mallard Island	All	0.29	0	-2	1.2
	Drought	0.25	-1	-2	1.0
Major Diversions (Pumping Stations)					
North Bay Aqueduct at Barker Slough PP	All	0.38	-8	-8	1.6
	Drought	0.38	-9	-9	1.6
Contra Costa Pumping Plant #1	All	0.51	3	3	2.1
	Drought	0.47	3	2	1.9
Banks Pumping Plant	All	0.46	-9	-11	1.9
	Drought	0.48	0	-3	2.0
Jones Pumping Plant	All	0.49	-7	-10	2.0
	Drought	0.52	1	-2	2.2

Notes:

[a] All: Water years 1975-1991 represent the 16-year period modeled using DSM2. Drought: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

[b] % change indicates a negative change (increased concentrations) relative to baseline when values are positive and a positive change (lowered concentrations) relative to baseline when values are negative. Changes of 10% or more are highlighted.

[c] Exceedance Quotient - All concentrations exceed total maximum daily load guidance concentration of 0.24 mg/kg ww Hg.

Alt. - alternative

EX - Existing Conditions

mg/kg - milligram per kilogram

NAA-LLT - No Action Alternative Late Long Term

ww - wet weight

Table I-10b. Summary Table for Mercury Concentrations in 350 mm Largemouth Bass Fillets, and Comparisons to Baseline Conditions and Benchmark for Alternative 1. Concentrations presented as based on Equation 2.

Location	Period [a]	Estimated Concentrations of Mercury (mg/kg, ww)	% Change In Mercury Concentrations Compared to Baseline[b]		Exceedance Quotients[c]
		Alt. 1	EX	NAA-LLT	Alt. 1
Delta Interior					
Mokelumne River (South Fork) at Staten Island	All	0.83	8	10	3.5
	Drought	0.69	7	7	2.9
San Joaquin River at Buckley Cove	All	1.03	3	-2	4.3
	Drought	1.08	5	-1	4.5
Franks Tract	All	0.65	7	6	2.7
	Drought	0.57	6	3	2.4
Old River at Rock Slough	All	0.68	7	5	2.9
	Drought	0.61	7	3	2.6
Western Delta					
Sacramento River at Emmaton	All	0.49	0	-1	2.0
	Drought	0.47	-1	-1	2.0
SJR at Antioch	All	0.51	4	3	2.1
	Drought	0.43	2	0	1.8
Sacramento River at Mallard Island	All	0.34	-1	-3	1.4
	Drought	0.27	-1	-3	1.1
Major Diversions (Pumping Stations)					
North Bay Aqueduct at Barker Slough PP	All	0.50	-11	-11	2.1
	Drought	0.50	-12	-12	2.1
Contra Costa Pumping Plant #1	All	0.74	5	5	3.1
	Drought	0.66	4	2	2.8
Banks Pumping Plant	All	0.65	-13	-15	2.7
	Drought	0.70	0	-4	2.9
Jones Pumping Plant	All	0.72	-10	-13	3.0
	Drought	0.77	1	-3	3.2

Notes:

[a] All: Water years 1975-1991 represent the 16-year period modeled using DSM2. Drought: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

[b] % change indicates a negative change (increased concentrations) relative to baseline when values are positive and a positive change (lowered concentrations) relative to baseline when values are negative. Changes of 10% or more are highlighted.

[c] Exceedance Quotient - All concentrations exceed total maximum daily load guidance concentration of 0.24 mg/kg ww Hg.

Alt. - alternative

EX - Existing Conditions

mg/kg - milligram per kilogram

NAA-LLT - No Action Alternative Late Long Term

ww - wet weight

Table I-11a. Summary Table for Mercury Concentrations in 350 mm Largemouth Bass Fillets, and Comparisons to Baseline Conditions and Benchmark for Alternative 2. Concentrations presented as based on Equation 1.

Location	Period [a]	Estimated Concentrations of Mercury (mg/kg, ww)	% Change In Mercury Concentrations Compared to Baseline[b]		Exceedance Quotients[c]
		Alt. 2	EX	NAA-LLT	Alt. 2
Delta Interior					
Mokelumne River (South Fork) at Staten Island	All	0.55	7	8	2.3
	Drought	0.48	5	6	2.0
San Joaquin River at Buckley Cove	All	0.63	0	-3	2.6
	Drought	0.64	1	-3	2.7
Franks Tract	All	0.47	8	8	2.0
	Drought	0.43	7	5	1.8
Old River at Rock Slough	All	0.49	9	8	2.1
	Drought	0.45	8	5	1.9
Western Delta					
Sacramento River at Emmaton	All	0.38	2	1	1.6
	Drought	0.37	0	0	1.5
SJR at Antioch	All	0.39	7	6	1.7
	Drought	0.35	3	3	1.5
Sacramento River at Mallard Island	All	0.29	4	2	1.3
	Drought	0.25	2	0	1.1
Major Diversions (Pumping Stations)					
North Bay Aqueduct at Barker Slough PP	All	0.38	-8	-8	1.6
	Drought	0.38	-9	-9	1.6
Contra Costa Pumping Plant #1	All	0.52	7	7	2.2
	Drought	0.47	5	4	2.0
Banks Pumping Plant	All	0.47	-10	-11	1.9
	Drought	0.47	0	-3	2.0
Jones Pumping Plant	All	0.48	-10	-13	2.0
	Drought	0.50	-2	-5	2.1

Notes:

[a] All: Water years 1975-1991 represent the 16-year period modeled using DSM2. Drought: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

[b] % change indicates a negative change (increased concentrations) relative to baseline when values are positive and a positive change (lowered concentrations) relative to baseline when values are negative. Changes of 10% or more are highlighted.

[c] Exceedance Quotient - All concentrations exceed total maximum daily load guidance concentration of 0.24 mg/kg ww Hg.

Alt. - alternative

EX - Existing Conditions

mg/kg - milligram per kilogram

NAA-LLT - No Action Alternative Late Long Term

ww - wet weigh

Table I-12b. Summary Table for Mercury Concentrations in 350 mm Largemouth Bass Fillets, and Comparisons to Baseline Conditions and Benchmark for Alternative 2. Concentrations presented as based on Equation 2.

Location	Period [a]	Estimated Concentrations of Mercury (mg/kg, ww)	% Change In Mercury Concentrations Compared to Baseline[b]		Exceedance Quotients[c]
		Alt. 2	EX	NAA-LLT	Alt. 2
Delta Interior					
Mokelumne River (South Fork) at Staten Island	All	0.84	9	11	3.5
	Drought	0.69	8	8	2.9
San Joaquin River at Buckley Cove	All	1.01	1	-4	4.2
	Drought	1.04	1	-4	4.3
Franks Tract	All	0.68	12	11	2.8
	Drought	0.59	10	7	2.4
Old River at Rock Slough	All	0.72	13	11	3.0
	Drought	0.64	11	7	2.7
Western Delta					
Sacramento River at Emmaton	All	0.50	2	2	2.1
	Drought	0.48	0	0	2.0
SJR at Antioch	All	0.54	10	8	2.2
	Drought	0.44	5	4	1.8
Sacramento River at Mallard Island	All	0.36	6	3	1.5
	Drought	0.28	3	1	1.2
Major Diversions (Pumping Stations)					
North Bay Aqueduct at Barker Slough PP	All	0.50	-11	-10	2.1
	Drought	0.50	-12	-12	2.1
Contra Costa Pumping Plant #1	All	0.78	9	9	3.2
	Drought	0.69	8	6	2.9
Banks Pumping Plant	All	0.65	-14	-16	2.7
	Drought	0.70	0	-4	2.9
Jones Pumping Plant	All	0.68	-14	-17	2.8
	Drought	0.74	-3	-7	3.1

Notes:

[a] All: Water years 1975-1991 represent the 16-year period modeled using DSM2. Drought: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

[b] % change indicates a negative change (increased concentrations) relative to baseline when values are positive and a positive change (lowered concentrations) relative to baseline when values are negative. Changes of 10% or more are highlighted.

[c] Exceedance Quotient - All concentrations exceed total maximum daily load guidance concentration of 0.24 mg/kg ww Hg.

Alt. - alternative

EX - Existing Conditions

mg/kg - milligram per kilogram

NAA-LLT - No Action Alternative Late Long Term

ww - wet weight

t

Table I-13a. Summary Table for Mercury Concentrations in 350 mm Largemouth Bass Fillets, and Comparisons to Baseline Conditions and Benchmark for Alternative 3. Concentrations presented as based on Equation 1.

Location	Period [a]	Estimated Concentrations of Mercury (mg/kg, ww)	% Change In Mercury Concentrations Compared to Baseline[b]		Exceedance Quotients[c]
		Alt. 3	EX	NAA-LLT	Alt. 3
Delta Interior					
Mokelumne River (South Fork) at Staten Island	All	0.55	4	6	2.2
	Drought	0.48	4	5	2.0
San Joaquin River at Buckley Cove	All	0.63	2	-1	2.7
	Drought	0.64	4	0	2.7
Franks Tract	All	0.47	4	4	1.9
	Drought	0.43	3	2	1.7
Old River at Rock Slough	All	0.49	4	3	2.0
	Drought	0.45	4	2	1.8
Western Delta					
Sacramento River at Emmaton	All	0.38	0	-1	1.6
	Drought	0.37	-1	-1	1.5
SJR at Antioch	All	0.40	2	1	1.6
	Drought	0.35	1	0	1.4
Sacramento River at Mallard Island	All	0.30	-1	-3	1.2
	Drought	0.25	0	-2	1.0
Major Diversions (Pumping Stations)					
North Bay Aqueduct at Barker Slough PP	All	0.38	-8	-8	1.6
	Drought	0.38	-9	-9	1.6
Contra Costa Pumping Plant #1	All	0.52	3	3	2.1
	Drought	0.48	3	1	1.9
Banks Pumping Plant	All	0.46	-6	-8	2.0
	Drought	0.48	0	-3	2.0
Jones Pumping Plant	All	0.49	-4	-6	2.1
	Drought	0.51	0	-3	2.1

Notes:

[a] All: Water years 1975-1991 represent the 16-year period modeled using DSM2. Drought: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

[b] % change indicates a negative change (increased concentrations) relative to baseline when values are positive and a positive change (lowered concentrations) relative to baseline when values are negative. Changes of 10% or more are highlighted.

[c] Exceedance Quotient - All concentrations exceed total maximum daily load guidance concentration of 0.24 mg/kg ww Hg.

Alt. - alternative

EX - Existing Conditions

mg/kg - milligram per kilogram

NAA-LLT - No Action Alternative Late Long Term

ww - wet weight

Table I-14b. Summary Table for Mercury Concentrations in 350 mm Largemouth Bass Fillets, and Comparisons to Baseline Conditions and Benchmark for Alternative 3. Concentrations presented as based on Equation 2.

Location	Period [a]	Estimated Concentrations of Mercury (mg/kg, ww)	% Change In Mercury Concentrations Compared to Baseline[b]		Exceedance Quotients[c]
		Alt. 3	EX	NAA-LLT	Alt. 3
Delta Interior					
Mokelumne River (South Fork) at Staten Island	All	0.82	6	8	3.4
	Drought	0.69	6	7	2.9
San Joaquin River at Buckley Cove	All	1.03	3	-2	4.3
	Drought	1.08	5	0	4.5
Franks Tract	All	0.64	6	5	2.7
	Drought	0.56	5	3	2.3
Old River at Rock Slough	All	0.68	6	4	2.8
	Drought	0.61	6	2	2.5
Western Delta					
Sacramento River at Emmaton	All	0.49	0	-1	2.0
	Drought	0.47	-1	-1	2.0
SJR at Antioch	All	0.50	3	2	2.1
	Drought	0.43	1	0	1.8
Sacramento River at Mallard Island	All	0.33	-2	-4	1.4
	Drought	0.27	0	-2	1.1
Major Diversions (Pumping Stations)					
North Bay Aqueduct at Barker Slough PP	All	0.50	-11	-11	2.1
	Drought	0.50	-12	-12	2.1
Contra Costa Pumping Plant #1	All	0.74	4	4	3.1
	Drought	0.66	4	2	2.8
Banks Pumping Plant	All	0.68	-8	-11	2.9
	Drought	0.70	0	-4	2.9
Jones Pumping Plant	All	0.75	-6	-9	3.1
	Drought	0.76	0	-5	3.2

Notes:

[a] All: Water years 1975-1991 represent the 16-year period modeled using DSM2. Drought: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

[b] % change indicates a negative change (increased concentrations) relative to baseline when values are positive and a positive change (lowered concentrations) relative to baseline when values are negative. Changes of 10% or more are highlighted.

[c] Exceedance Quotient - All concentrations exceed total maximum daily load guidance concentration of 0.24 mg/kg ww Hg.

Alt. - alternative

EX - Existing Conditions

mg/kg - milligram per kilogram

NAA-LLT - No Action Alternative Late Long Term

ww - wet weight

Table I-15Aa. Summary Table for Mercury Concentrations in 350 mm Largemouth Bass Fillets, and Comparisons to Baseline Conditions and Benchmark for Alternative 4, Scenario H1. Concentrations presented as based on Equation 1.

Location	Period [a]	Estimated Concentrations of Mercury (mg/kg, ww)	% Change In Mercury Concentrations Compared to Baseline[b]		Exceedance Quotients[c]
		Alt. 4 H1	EX	NAA-LLT	Alt. 4 H1
Delta Interior					
Mokelumne River (South Fork) at Staten Island	All	0.547	6	7	2.3
	Drought	0.478	5	5	2.0
San Joaquin River at Buckley Cove	All	0.627	0	-3	2.6
	Drought	0.642	1	-3	2.7
Franks Tract	All	0.464	6	6	1.9
	Drought	0.421	5	4	1.8
Old River at Rock Slough	All	0.483	6	5	2.0
	Drought	0.445	6	3	1.9
Western Delta/					
Sacramento River at Emmaton	All	0.378	1	0	1.6
	Drought	0.366	-1	-1	1.5
SJR at Antioch	All	0.390	4	3	1.6
	Drought	0.343	2	1	1.4
Sacramento River at Mallard Island	All	0.292	1	0	1.2
	Drought	0.250	0	-1	1.0
Major Diversions (Pumping Stations)					
North Bay Aqueduct at Barker Slough PP	All	0.383	-8	-8	1.6
	Drought	0.383	-9	-9	1.6
Contra Costa Pumping Plant #1	All	0.510	4	4	2.1
	Drought	0.469	3	2	2.0
Banks Pumping Plant	All	0.462	-9	-10	1.9
	Drought	0.484	0	-3	2.0
Jones Pumping Plant	All	0.492	-7	-10	2.0
	Drought	0.515	0	-3	2.1

Notes:

[a] All: Water years 1975-1991 represent the 16-year period modeled using DSM2. Drought: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

[b] % change indicates a negative change (increased concentrations) relative to baseline when values are positive and a positive change (lowered concentrations) relative to baseline when values are negative. Changes of 10% or more are highlighted.

[c] Exceedance Quotient - All concentrations exceed total maximum daily load guidance concentration of 0.24 mg/kg ww Hg.

Alt. - alternative

EX - Existing Conditions

mg/kg - milligram per kilogram

NAA-LLT - No Action Alternative Late Long Term

ww - wet weight

Table I-16Ab. Summary Table for Mercury Concentrations in 350 mm Largemouth Bass Fillets, and Comparisons to Baseline Conditions and Benchmark for Alternative 4, Scenario H1. Concentrations presented as based on Equation 2.

Location	Period [a]	Estimated Concentrations of Mercury (mg/kg, ww)	% Change In Mercury Concentrations Compared to Baseline[b]		Exceedance Quotients[c]
		Alt. 4 H1	EX	NAA-LLT	Alt. 4 H1
Delta Interior					
Mokelumne River (South Fork) at Staten Island	All	0.83	9	10	3.5
	Drought	0.69	7	7	2.9
San Joaquin River at Buckley Cove	All	1.01	1	-4	4.2
	Drought	1.04	2	-4	4.3
Franks Tract	All	0.66	9	8	2.8
	Drought	0.58	7	5	2.4
Old River at Rock Slough	All	0.70	9	7	2.9
	Drought	0.62	8	4	2.6
Western Delta/					
Sacramento River at Emmaton	All	0.50	1	0	2.1
	Drought	0.47	-1	-1	2.0
SJR at Antioch	All	0.52	6	5	2.2
	Drought	0.43	3	2	1.8
Sacramento River at Mallard Island	All	0.34	1	-1	1.4
	Drought	0.28	0	-2	1.2
Major Diversions (Pumping Stations)					
North Bay Aqueduct at Barker Slough PP	All	0.50	-11	-11	2.1
	Drought	0.50	-12	-12	2.1
Contra Costa Pumping Plant #1	All	0.75	6	6	3.1
	Drought	0.67	5	3	2.8
Banks Pumping Plant	All	0.66	-12	-14	2.7
	Drought	0.70	0	-4	2.9
Jones Pumping Plant	All	0.72	-10	-13	3.0
	Drought	0.77	0	-4	3.2

Notes:

[a] All: Water years 1975-1991 represent the 16-year period modeled using DSM2. Drought: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

[b] % change indicates a negative change (increased concentrations) relative to baseline when values are positive and a positive change (lowered concentrations) relative to baseline when values are negative. Changes of 10% or more are highlighted.

[c] Exceedance Quotient - All concentrations exceed total maximum daily load guidance concentration of 0.24 mg/kg ww Hg.

Alt. - alternative

EX - Existing Conditions

mg/kg - milligram per kilogram

NAA-LLT - No Action Alternative Late Long Term

ww - wet weight

Table I-11Ba. Summary Table for Mercury Concentrations in 350 mm Largemouth Bass Fillets, and Comparisons to Baseline Conditions and Benchmark for Alternative 4, Scenario H2. Concentrations presented as based on Equation 1.

Location	Period [a]	Estimated Concentrations of Mercury (mg/kg, ww)	% Change In Mercury Concentrations Compared to Baseline[b]		Exceedance Quotients[c]
		Alt. 4 H2	EX	NAA-LLT	Alt. 4 H2
Delta Interior					
Mokelumne River (South Fork) at Staten Island	All	0.549	6	8	2.3
	Drought	0.480	5	6	2.0
San Joaquin River at Buckley Cove	All	0.627	0	-3	2.6
	Drought	0.642	1	-3	2.7
Franks Tract	All	0.469	7	7	2.0
	Drought	0.425	6	5	1.8
Old River at Rock Slough	All	0.490	8	6	2.0
	Drought	0.451	7	4	1.9
Western Delta					
Sacramento River at Emmaton	All	0.379	1	0	1.6
	Drought	0.367	0	0	1.5
SJR at Antioch	All	0.393	5	4	1.6
	Drought	0.346	3	2	1.4
Sacramento River at Mallard Island	All	0.294	1	0	1.2
	Drought	0.251	1	-1	1.0
Major Diversions (Pumping Stations)					
North Bay Aqueduct at Barker Slough PP	All	0.383	-8	-7	1.6
	Drought	0.384	-9	-8	1.6
Contra Costa Pumping Plant #1	All	0.518	6	6	2.2
	Drought	0.475	5	3	2.0
Banks Pumping Plant	All	0.467	-8	-9	1.9
	Drought	0.472	-2	-5	2.0
Jones Pumping Plant	All	0.484	-9	-11	2.0
	Drought	0.503	-2	-5	2.1

Notes:

[a] All: Water years 1975-1991 represent the 16-year period modeled using DSM2. Drought: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

[b] % change indicates a negative change (increased concentrations) relative to baseline when values are positive and a positive change (lowered concentrations) relative to baseline when values are negative. Changes of 10% or more are highlighted.

[c] Exceedance Quotient - All concentrations exceed total maximum daily load guidance concentration of 0.24 mg/kg ww Hg.

Alt. - alternative

EX - Existing Conditions

mg/kg - milligram per kilogram

NAA-LLT - No Action Alternative Late Long Term

ww - wet weight

Table I-11Bb. Summary Table for Mercury Concentrations in 350 mm Largemouth Bass Fillets, and Comparisons to Baseline Conditions and Benchmark for Alternative 4, Scenario H2. Concentrations presented as based on Equation 2.

Location	Period [a]	Estimated Concentrations of Mercury (mg/kg, ww)	% Change In Mercury Concentrations Compared to Baseline[b]		Exceedance Quotients[c]
		Alt. 4 H2	EX	NAA-LLT	Alt. 4 H2
Delta Interior					
Mokelumne River (South Fork) at Staten Island	All	0.84	9	11	3.5
	Drought	0.69	7	8	2.9
San Joaquin River at Buckley Cove	All	1.01	1	-4	4.2
	Drought	1.04	2	-4	4.3
Franks Tract	All	0.67	11	10	2.8
	Drought	0.58	9	7	2.4
Old River at Rock Slough	All	0.71	11	9	3.0
	Drought	0.63	10	6	2.6
Western Delta					
Sacramento River at Emmaton	All	0.50	1	1	2.1
	Drought	0.47	0	0	2.0
SJR at Antioch	All	0.52	7	6	2.2
	Drought	0.44	4	3	1.8
Sacramento River at Mallard Island	All	0.35	2	0	1.4
	Drought	0.28	1	-1	1.2
Major Diversions (Pumping Stations)					
North Bay Aqueduct at Barker Slough PP	All	0.50	-11	-10	2.1
	Drought	0.51	-12	-12	2.1
Contra Costa Pumping Plant #1	All	0.77	9	8	3.2
	Drought	0.68	7	5	2.8
Banks Pumping Plant	All	0.67	-11	-13	2.8
	Drought	0.68	-3	-7	2.8
Jones Pumping Plant	All	0.70	-12	-15	2.9
	Drought	0.74	-3	-7	3.1

Notes:

[a] All: Water years 1975-1991 represent the 16-year period modeled using DSM2. Drought: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

[b] % change indicates a negative change (increased concentrations) relative to baseline when values are positive and a positive change (lowered concentrations) relative to baseline when values are negative. Changes of 10% or more are highlighted.

[c] Exceedance Quotient - All concentrations exceed total maximum daily load guidance concentration of 0.24 mg/kg ww Hg.

Alt. - alternative

EX - Existing Conditions

mg/kg - milligram per kilogram

NAA-LLT - No Action Alternative Late Long Term

ww - wet weight

Table I-11Ca. Summary Table for Mercury Concentrations in 350 mm Largemouth Bass Fillets, and Comparisons to Baseline Conditions and Benchmark for Alternative 4, Scenario H3. Concentrations presented as based on Equation 1.

Location	Period [a]	Estimated Concentrations of Mercury (mg/kg, ww)	% Change In Mercury Concentrations Compared to Baseline[b]		Exceedance Quotients[c]
		Alt. 4 H3	EX	NAA-LLT	Alt. 4 H3
Delta Interior					
Mokelumne River (South Fork) at Staten Island	All	0.547	6	7	2.3
	Drought	0.479	5	5	2.0
San Joaquin River at Buckley Cove	All	0.627	0	-3	2.6
	Drought	0.641	1	-3	2.7
Franks Tract	All	0.471	8	7	2.0
	Drought	0.427	7	5	1.8
Old River at Rock Slough	All	0.494	9	7	2.1
	Drought	0.453	8	5	1.9
Western Delta					
Sacramento River at Emmaton	All	0.381	2	1	1.6
	Drought	0.368	0	0	1.5
SJR at Antioch	All	0.398	6	5	1.7
	Drought	0.348	4	3	1.5
Sacramento River at Mallard Island	All	0.300	4	2	1.2
	Drought	0.254	2	0	1.1
Major Diversions (Pumping Stations)					
North Bay Aqueduct at Barker Slough PP	All	0.383	-8	-8	1.6
	Drought	0.383	-9	-9	1.6
Contra Costa Pumping Plant #1	All	0.519	6	6	2.2
	Drought	0.477	5	4	2.0
Banks Pumping Plant	All	0.465	-8	-10	1.9
	Drought	0.485	0	-3	2.0
Jones Pumping Plant	All	0.487	-8	-10	2.0
	Drought	0.509	-1	-4	2.1

Notes:

[a] All: Water years 1975-1991 represent the 16-year period modeled using DSM2. Drought: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

[b] % change indicates a negative change (increased concentrations) relative to baseline when values are positive and a positive change (lowered concentrations) relative to baseline when values are negative. Changes of 10% or more are highlighted.

[c] Exceedance Quotient - All concentrations exceed total maximum daily load guidance concentration of 0.24 mg/kg ww Hg.

Alt. - alternative

EX - Existing Conditions

mg/kg - milligram per kilogram

NAA-LLT - No Action Alternative Late Long Term

ww - wet weight

Table I-11Cb. Summary Table for Mercury Concentrations in 350 mm Largemouth Bass Fillets, and Comparisons to Baseline Conditions and Benchmark for Alternative 4, Scenario H3. Concentrations presented as based on Equation 2.

Location	Period [a]	Estimated Concentrations of Mercury (mg/kg, ww)	% Change In Mercury Concentrations Compared to Baseline[b]		Exceedance Quotients[c]
		Alt. 4 H3	EX	NAA-LLT	Alt. 4 H3
Delta Interior					
Mokelumne River (South Fork) at Staten Island	All	0.83	8	10	3.5
	Drought	0.69	7	8	2.9
San Joaquin River at Buckley Cove	All	1.01	1	-4	4.2
	Drought	1.04	1	-4	4.3
Franks Tract	All	0.67	11	10	2.8
	Drought	0.59	9	7	2.4
Old River at Rock Slough	All	0.72	12	10	3.0
	Drought	0.64	11	7	2.7
Western Delta					
Sacramento River at Emmaton	All	0.50	2	1	2.1
	Drought	0.48	0	0	2.0
SJR at Antioch	All	0.53	9	8	2.2
	Drought	0.44	5	4	1.8
Sacramento River at Mallard Island	All	0.36	5	3	1.5
	Drought	0.28	3	1	1.2
Major Diversions (Pumping Stations)					
North Bay Aqueduct at Barker Slough PP	All	0.50	-11	-11	2.1
	Drought	0.50	-12	-12	2.1
Contra Costa Pumping Plant #1	All	0.77	9	9	3.2
	Drought	0.69	8	6	2.9
Banks Pumping Plant	All	0.66	-11	-14	2.8
	Drought	0.70	0	-4	2.9
Jones Pumping Plant	All	0.71	-11	-14	2.9
	Drought	0.75	-1	-6	3.1

Notes:

[a] All: Water years 1975-1991 represent the 16-year period modeled using DSM2. Drought: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

[b] % change indicates a negative change (increased concentrations) relative to baseline when values are positive and a positive change (lowered concentrations) relative to baseline when values are negative. Changes of 10% or more are highlighted.

[c] Exceedance Quotient - All concentrations exceed total maximum daily load guidance concentration of 0.24 mg/kg ww Hg.

Alt. - alternative

EX - Existing Conditions

mg/kg - milligram per kilogram

NAA-LLT - No Action Alternative Late Long Term

ww - wet weight

Table I-11Da. Summary Table for Mercury Concentrations in 350 mm Largemouth Bass Fillets, and Comparisons to Baseline Conditions and Benchmark for Alternative 4, Scenario H4. Concentrations presented as based on Equation 1.

Location	Period [a]	Estimated Concentrations of Mercury (mg/kg, ww)	% Change In Mercury Concentrations Compared to Baseline[b]		Exceedance Quotients[c]
		Alt. 4 H4	EX	NAA-LLT	Alt. 4 H4
Delta Interior					
Mokelumne River (South Fork) at Staten Island	All	0.548	6	7	2.3
	Drought	0.480	5	6	2.0
San Joaquin River at Buckley Cove	All	0.627	0	-3	2.6
	Drought	0.642	1	-3	2.7
Franks Tract	All	0.476	9	8	2.0
	Drought	0.430	7	6	1.8
Old River at Rock Slough	All	0.501	10	9	2.1
	Drought	0.458	9	6	1.9
Western Delta					
Sacramento River at Emmaton	All	0.382	2	1	1.6
	Drought	0.369	0	0	1.5
SJR at Antioch	All	0.400	7	6	1.7
	Drought	0.350	4	3	1.5
Sacramento River at Mallard Island	All	0.301	4	3	1.3
	Drought	0.254	2	1	1.1
Major Diversions (Pumping Stations)					
North Bay Aqueduct at Barker Slough PP	All	0.383	-8	-8	1.6
	Drought	0.383	-9	-8	1.6
Contra Costa Pumping Plant #1	All	0.526	8	8	2.2
	Drought	0.482	6	5	2.0
Banks Pumping Plant	All	0.463	-9	-10	1.9
	Drought	0.471	-3	-6	2.0
Jones Pumping Plant	All	0.480	-9	-12	2.0
	Drought	0.501	-3	-6	2.1

Notes:

[a] All: Water years 1975-1991 represent the 16-year period modeled using DSM2. Drought: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

[b] % change indicates a negative change (increased concentrations) relative to baseline when values are positive and a positive change (lowered concentrations) relative to baseline when values are negative. Changes of 10% or more are highlighted.

[c] Exceedance Quotient - All concentrations exceed total maximum daily load guidance concentration of 0.24 mg/kg ww Hg.

Alt. - alternative

EX - Existing Conditions

mg/kg - milligram per kilogram

NAA-LLT - No Action Alternative Late Long Term

ww - wet weight

Table I-11Db. Summary Table for Mercury Concentrations in 350 mm Largemouth Bass Fillets, and Comparisons to Baseline Conditions and Benchmark for Alternative 4, Scenario H4. Concentrations presented as based on Equation 2.

Location	Period [a]	Estimated Concentrations of Mercury (mg/kg, ww)	% Change In Mercury Concentrations Compared to Baseline[b]		Exceedance Quotients[c]
		Alt. 4 H4	EX	NAA-LLT	Alt. 4 H4
Delta Interior					
Mokelumne River (South Fork) at Staten Island	All	0.83	9	11	3.5
	Drought	0.69	7	8	2.9
San Joaquin River at Buckley Cove	All	1.01	1	-4	4.2
	Drought	1.04	2	-4	4.3
Franks Tract	All	0.68	13	12	2.9
	Drought	0.59	10	8	2.5
Old River at Rock Slough	All	0.74	15	12	3.1
	Drought	0.65	13	8	2.7
Western Delta					
Sacramento River at Emmaton	All	0.50	3	2	2.1
	Drought	0.48	0	0	2.0
SJR at Antioch	All	0.54	10	9	2.2
	Drought	0.44	6	4	1.8
Sacramento River at Mallard Island	All	0.36	6	4	1.5
	Drought	0.28	3	1	1.2
Major Diversions (Pumping Stations)					
North Bay Aqueduct at Barker Slough PP	All	0.50	-11	-10	2.1
	Drought	0.51	-12	-12	2.1
Contra Costa Pumping Plant #1	All	0.79	11	11	3.3
	Drought	0.70	9	7	2.9
Banks Pumping Plant	All	0.66	-12	-14	2.7
	Drought	0.67	-4	-8	2.8
Jones Pumping Plant	All	0.69	-13	-16	2.9
	Drought	0.73	-4	-8	3.1

Notes:

[a] All: Water years 1975-1991 represent the 16-year period modeled using DSM2. Drought: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

[b] % change indicates a negative change (increased concentrations) relative to baseline when values are positive and a positive change (lowered concentrations) relative to baseline when values are negative. Changes of 10% or more are highlighted.

[c] Exceedance Quotient - All concentrations exceed total maximum daily load guidance concentration of 0.24 mg/kg ww Hg.

Alt. - alternative

EX - Existing Conditions

mg/kg - milligram per kilogram

NAA-LLT - No Action Alternative Late Long Term

ww - wet weight

Table I-17a. Summary Table for Mercury Concentrations in 350 mm Largemouth Bass Fillets, and Comparisons to Baseline Conditions and Benchmark for Alternative 5. Concentrations presented as based on Equation 1.

Location	Period [a]	Estimated Concentrations of Mercury (mg/kg, ww)	% Change In Mercury Concentrations Compared to Baseline[b]		Exceedance Quotients[c]
		Alt. 5	EX	NAA-LLT	Alt. 5
Delta Interior					
Mokelumne River (South Fork) at Staten Island	All	0.53	3	5	2.2
	Drought	0.48	4	5	2.0
San Joaquin River at Buckley Cove	All	0.63	1	-2	2.6
	Drought	0.65	2	-2	2.7
Franks Tract	All	0.46	5	4	1.9
	Drought	0.42	4	3	1.7
Old River at Rock Slough	All	0.48	5	3	2.0
	Drought	0.44	5	2	1.8
Western Delta					
Sacramento River at Emmaton	All	0.38	0	0	1.6
	Drought	0.37	-1	-1	1.5
SJR at Antioch	All	0.39	3	2	1.6
	Drought	0.34	2	1	1.4
Sacramento River at Mallard Island	All	0.29	1	-1	1.2
	Drought	0.25	1	-1	1.0
Major Diversions (Pumping Stations)					
North Bay Aqueduct at Barker Slough PP	All	0.38	-8	-8	1.6
	Drought	0.38	-9	-9	1.6
Contra Costa Pumping Plant #1	All	0.50	3	3	2.1
	Drought	0.47	3	1	1.9
Banks Pumping Plant	All	0.49	-4	-6	2.0
	Drought	0.49	1	-2	2.0
Jones Pumping Plant	All	0.52	-2	-5	2.2
	Drought	0.52	1	-2	2.2

Notes:

[a] All: Water years 1975-1991 represent the 16-year period modeled using DSM2. Drought: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

[b] % change indicates a negative change (increased concentrations) relative to baseline when values are positive and a positive change (lowered concentrations) relative to baseline when values are negative. Changes of 10% or more are highlighted.

[c] Exceedance Quotient - All concentrations exceed total maximum daily load guidance concentration of 0.24 mg/kg ww Hg.

Alt. - alternative

EX - Existing Conditions

mg/kg - milligram per kilogram

NAA-LLT - No Action Alternative Late Long Term

ww - wet weight

Table I-18b. Summary Table for Mercury Concentrations in 350 mm Largemouth Bass Fillets, and Comparisons to Baseline Conditions and Benchmark for Alternative 5. Concentrations presented as based on Equation 2.

Location	Period [a]	Estimated Concentrations of Mercury (mg/kg, ww)	% Change In Mercury Concentrations Compared to Baseline[b]		Exceedance Quotients[c]
		Alt. 5	EX	NAA-LLT	Alt. 5
Delta Interior					
Mokelumne River (South Fork) at Staten Island	All	0.80	5	6	3.3
	Drought	0.69	6	7	2.9
San Joaquin River at Buckley Cove	All	1.02	2	-3	4.3
	Drought	1.06	3	-2	4.4
Franks Tract	All	0.65	6	6	2.7
	Drought	0.57	6	4	2.4
Old River at Rock Slough	All	0.69	7	5	2.9
	Drought	0.62	8	4	2.6
Western Delta					
Sacramento River at Emmaton	All	0.49	0	-1	2.0
	Drought	0.47	-1	-1	2.0
SJR at Antioch	All	0.51	4	3	2.1
	Drought	0.43	3	2	1.8
Sacramento River at Mallard Island	All	0.34	1	-1	1.4
	Drought	0.28	1	-1	1.2
Major Diversions (Pumping Stations)					
North Bay Aqueduct at Barker Slough PP	All	0.50	-12	-11	2.1
	Drought	0.50	-12	-12	2.1
Contra Costa Pumping Plant #1	All	0.74	4	4	3.1
	Drought	0.66	4	2	2.8
Banks Pumping Plant	All	0.71	-6	-8	2.9
	Drought	0.71	2	-3	3.0
Jones Pumping Plant	All	0.77	-3	-7	3.2
	Drought	0.78	2	-3	3.2

Notes:

[a] All: Water years 1975-1991 represent the 16-year period modeled using DSM2. Drought: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

[b] % change indicates a negative change (increased concentrations) relative to baseline when values are positive and a positive change (lowered concentrations) relative to baseline when values are negative. Changes of 10% or more are highlighted.

[c] Exceedance Quotient - All concentrations exceed total maximum daily load guidance concentration of 0.24 mg/kg ww Hg.

Alt. - alternative

EX - Existing Conditions

mg/kg - milligram per kilogram

NAA-LLT - No Action Alternative Late Long Term

ww - wet weight

Table I-19a. Summary Table for Mercury Concentrations in 350 mm Largemouth Bass Fillets, and Comparisons to Baseline Conditions and Benchmark for Alternative 6. Concentrations presented as based on Equation 1.

Location	Period [a]	Estimated Concentrations of Mercury (mg/kg, ww)	% Change In Mercury Concentrations Compared to Baseline[b]		Exceedance Quotients[c]
		Alt. 6	EX	NAA-LLT	Alt. 6
Delta Interior					
Mokelumne River (South Fork) at Staten Island	All	0.57	10	11	2.4
	Drought	0.49	8	9	2.1
San Joaquin River at Buckley Cove	All	0.63	1	-2	2.6
	Drought	0.65	3	-1	2.7
Franks Tract	All	0.54	23	22	2.2
	Drought	0.50	24	23	2.1
Old River at Rock Slough	All	0.61	34	32	2.5
	Drought	0.60	42	38	2.5
Western Delta/					
Sacramento River at Emmaton	All	0.40	8	7	1.7
	Drought	0.39	6	6	1.6
SJR at Antioch	All	0.45	19	18	1.9
	Drought	0.40	17	17	1.6
Sacramento River at Mallard Island	All	0.33	15	13	1.4
	Drought	0.28	14	12	1.2
Major Diversions (Pumping Stations)					
North Bay Aqueduct at Barker Slough PP	All	0.39	-7	-6	1.6
	Drought	0.39	-7	-7	1.6
Contra Costa Pumping Plant #1	All	0.65	32	32	2.7
	Drought	0.63	39	37	2.6
Banks Pumping Plant	All	0.37	-28	-29	1.5
	Drought	0.37	-24	-27	1.5
Jones Pumping Plant	All	0.37	-31	-33	1.5
	Drought	0.37	-29	-31	1.5

Notes:

[a] All: Water years 1975-1991 represent the 16-year period modeled using DSM2. Drought: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

[b] % change indicates a negative change (increased concentrations) relative to baseline when values are positive and a positive change (lowered concentrations) relative to baseline when values are negative. Changes of 10% or more are highlighted.

[c] Exceedance Quotient - All concentrations exceed total maximum daily load guidance concentration of 0.24 mg/kg ww Hg.

Alt. - alternative

EX - Existing Conditions

mg/kg - milligram per kilogram

NAA-LLT - No Action Alternative Late Long Term

ww - wet weight

Table I-20b. Summary Table for Mercury Concentrations in 350 mm Largemouth Bass Fillets, and Comparisons to Baseline Conditions and Benchmark for Alternative 6. Concentrations presented as based on Equation 2.

Location	Period [a]	Estimated Concentrations of Mercury (mg/kg, ww)	% Change In Mercury Concentrations Compared to Baseline[b]		Exceedance Quotients[c]
		Alt. 6	EX	NAA-LLT	Alt. 6
Delta Interior					
Mokelumne River (South Fork) at Staten Island	All	0.88	14	16	3.6
	Drought	0.72	12	12	3.0
San Joaquin River at Buckley Cove	All	1.02	2	-3	4.3
	Drought	1.07	4	-2	4.5
Franks Tract	All	0.81	33	33	3.4
	Drought	0.73	36	33	3.0
Old River at Rock Slough	All	0.96	50	47	4.0
	Drought	0.94	64	58	3.9
Western Delta/					
Sacramento River at Emmaton	All	0.54	11	10	2.3
	Drought	0.52	9	8	2.2
SJR at Antioch	All	0.63	28	27	2.6
	Drought	0.53	25	24	2.2
Sacramento River at Mallard Island	All	0.41	21	19	1.7
	Drought	0.33	20	18	1.4
Major Diversions (Pumping Stations)					
North Bay Aqueduct at Barker Slough PP	All	0.51	-10	-9	2.1
	Drought	0.51	-10	-10	2.1
Contra Costa Pumping Plant #1	All	1.05	48	48	4.4
	Drought	1.01	59	56	4.2
Banks Pumping Plant	All	0.47	-37	-38	2.0
	Drought	0.47	-33	-35	2.0
Jones Pumping Plant	All	0.47	-41	-43	2.0
	Drought	0.47	-38	-41	2.0

Notes:

[a] All: Water years 1975-1991 represent the 16-year period modeled using DSM2. Drought: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

[b] % change indicates a negative change (increased concentrations) relative to baseline when values are positive and a positive change (lowered concentrations) relative to baseline when values are negative. Changes of 10% or more are highlighted.

[c] Exceedance Quotient - All concentrations exceed total maximum daily load guidance concentration of 0.24 mg/kg ww Hg.

Alt. - alternative

EX - Existing Conditions

mg/kg - milligram per kilogram

NAA-LLT - No Action Alternative Late Long Term

ww - wet weight

Table I-21a. Summary Table for Mercury Concentrations in 350 mm Largemouth Bass Fillets, and Comparisons to Baseline Conditions and Benchmark for Alternative 7. Estimates presented as based on Equation 1.

Location	Period [a]	Estimated Concentrations of Mercury (mg/kg, ww)	% Change In Mercury Concentrations Compared to Baseline[b]		Exceedance Quotients[c]
		Alt. 7	EX	NAA-LLT	Alt. 7
Delta Interior					
Mokelumne River (South Fork) at Staten Island	All	0.55	7	8	2.3
	Drought	0.48	6	6	2.0
San Joaquin River at Buckley Cove	All	0.63	1	-2	2.6
	Drought	0.65	2	-3	2.7
Franks Tract	All	0.51	16	15	2.1
	Drought	0.47	18	16	2.0
Old River at Rock Slough	All	0.56	23	22	2.3
	Drought	0.55	30	27	2.3
Western Delta/					
Sacramento River at Emmaton	All	0.39	4	4	1.6
	Drought	0.38	4	3	1.6
SJR at Antioch	All	0.42	13	12	1.8
	Drought	0.38	13	12	1.6
Sacramento River at Mallard Island	All	0.32	10	9	1.3
	Drought	0.28	11	10	1.2
Major Diversions (Pumping Stations)					
North Bay Aqueduct at Barker Slough PP	All	0.38	-8	-7	1.6
	Drought	0.38	-8	-8	1.6
Contra Costa Pumping Plant #1	All	0.59	21	21	2.5
	Drought	0.57	26	25	2.4
Banks Pumping Plant	All	0.41	-20	-21	1.7
	Drought	0.40	-17	-20	1.7
Jones Pumping Plant	All	0.41	-22	-24	1.7
	Drought	0.40	-22	-24	1.7

Notes:

[a] All: Water years 1975-1991 represent the 16-year period modeled using DSM2. Drought: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

[b] % change indicates a negative change (increased concentrations) relative to baseline when values are positive and a positive change (lowered concentrations) relative to baseline when values are negative. Changes of 10% or more are highlighted.

[c] Exceedance Quotient - All concentrations exceed total maximum daily load guidance concentration of 0.24 mg/kg ww Hg.

Alt. - alternative

EX - Existing Conditions

mg/kg - milligram per kilogram

NAA-LLT - No Action Alternative Late Long Term

ww - wet weight

Table I-22b. Summary Table for Mercury Concentrations in 350 mm Largemouth Bass Fillets, and Comparisons to Baseline Conditions and Benchmark for Alternative 7. Estimates presented as based on Equation 2.

Location	Period [a]	Estimated Concentrations of Mercury (mg/kg, ww)	% Change In Mercury Concentrations Compared to Baseline[b]		Exceedance Quotients[c]
		Alt. 7	EX	NAA-LLT	Alt. 7
Delta Interior					
Mokelumne River (South Fork) at Staten Island	All	0.84	10	11	3.5
	Drought	0.70	9	9	2.9
San Joaquin River at Buckley Cove	All	1.02	2	-3	4.3
	Drought	1.05	2	-4	4.4
Franks Tract	All	0.75	23	22	3.1
	Drought	0.68	26	23	2.8
Old River at Rock Slough	All	0.86	34	32	3.6
	Drought	0.83	45	39	3.5
Western Delta/					
Sacramento River at Emmaton	All	0.52	6	5	2.2
	Drought	0.50	5	5	2.1
SJR at Antioch	All	0.58	19	18	2.4
	Drought	0.50	19	17	2.1
Sacramento River at Mallard Island	All	0.39	15	13	1.6
	Drought	0.32	16	14	1.3
Major Diversions (Pumping Stations)					
North Bay Aqueduct at Barker Slough PP	All	0.50	-11	-10	2.1
	Drought	0.51	-12	-11	2.1
Contra Costa Pumping Plant #1	All	0.92	30	30	3.9
	Drought	0.89	39	36	3.7
Banks Pumping Plant	All	0.55	-27	-28	2.3
	Drought	0.54	-24	-27	2.2
Jones Pumping Plant	All	0.56	-30	-32	2.3
	Drought	0.54	-29	-32	2.3

Notes:

[a] All: Water years 1975-1991 represent the 16-year period modeled using DSM2. Drought: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

[b] % change indicates a negative change (increased concentrations) relative to baseline when values are positive and a positive change (lowered concentrations) relative to baseline when values are negative. Changes of 10% or more are highlighted.

[c] Exceedance Quotient - All concentrations exceed total maximum daily load guidance concentration of 0.24 mg/kg ww Hg.

Alt. - alternative

EX - Existing Conditions

mg/kg - milligram per kilogram

NAA-LLT - No Action Alternative Late Long Term

ww - wet weight

Table I-23a. Summary Table for Mercury Concentrations in 350 mm Largemouth Bass Fillets, and Comparisons to Baseline Conditions and Benchmark for Alternative 8. Estimates presented as based on Equation 1.

Location	Period [a]	Estimated Concentrations of Mercury (mg/kg, ww)	% Change In Mercury Concentrations Compared to Baseline[b]		Exceedance Quotients[c]
		Alt. 8	EX	NAA-LLT	Alt. 8
Delta Interior					
Mokelumne River (South Fork) at Staten Island	All	0.55	6	8	2.3
	Drought	0.48	6	6	2.0
San Joaquin River at Buckley Cove	All	0.63	2	-2	2.6
	Drought	0.65	3	-1	2.7
Franks Tract	All	0.53	22	21	2.2
	Drought	0.50	26	24	2.1
Old River at Rock Slough	All	0.58	27	26	2.4
	Drought	0.57	35	32	2.4
Western Delta					
Sacramento River at Emmaton	All	0.67	77	76	2.8
	Drought	0.50	36	36	2.1
SJR at Antioch	All	0.53	41	40	2.2
	Drought	0.46	37	36	1.9
Sacramento River at Mallard Island	All	0.51	77	75	2.1
	Drought	0.36	46	44	1.5
Major Diversions (Pumping Stations)					
North Bay Aqueduct at Barker Slough PP	All	0.95	129	131	4.0
	Drought	0.66	57	57	2.7
Contra Costa Pumping Plant #1	All	0.61	25	25	2.5
	Drought	0.59	31	29	2.5
Banks Pumping Plant	All	0.42	-16	-18	1.8
	Drought	0.43	-11	-14	1.8
Jones Pumping Plant	All	0.42	-21	-23	1.7
	Drought	0.41	-20	-23	1.7

Notes:

[a] All: Water years 1975-1991 represent the 16-year period modeled using DSM2. Drought: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

[b] % change indicates a negative change (increased concentrations) relative to baseline when values are positive and a positive change (lowered concentrations) relative to baseline when values are negative. Changes of 10% or more are highlighted.

[c] Exceedance Quotient - All concentrations exceed total maximum daily load guidance concentration of 0.24 mg/kg ww Hg.

Alt. - alternative

EX - Existing Conditions

mg/kg - milligram per kilogram

NAA-LLT - No Action Alternative Late Long Term

ww - wet weight

Table I-24b. Summary Table for Mercury Concentrations in 350 mm Largemouth Bass Fillets, and Comparisons to Baseline Conditions and Benchmark for Alternative 8. Estimates presented as based on Equation 2.

Location	Period [a]	Estimated Concentrations of Mercury (mg/kg, ww)	% Change In Mercury Concentrations Compared to Baseline[b]		Exceedance Quotients[c]
		Alt. 8	EX	NAA-LLT	Alt. 8
Delta Interior					
Mokelumne River (South Fork) at Staten Island	All	0.84	9	11	3.5
	Drought	0.70	8	9	2.9
San Joaquin River at Buckley Cove	All	1.03	2	-3	4.3
	Drought	1.07	4	-2	4.5
Franks Tract	All	0.80	32	31	3.3
	Drought	0.74	38	35	3.1
Old River at Rock Slough	All	0.90	41	38	3.8
	Drought	0.88	53	47	3.7
Western Delta					
Sacramento River at Emmaton	All	1.10	124	122	4.6
	Drought	0.74	54	54	3.1
SJR at Antioch	All	0.79	62	60	3.3
	Drought	0.66	56	54	2.7
Sacramento River at Mallard Island	All	0.76	124	119	3.2
	Drought	0.47	71	67	2.0
Major Diversions (Pumping Stations)					
North Bay Aqueduct at Barker Slough PP	All	1.82	221	224	**7.6**
	Drought	1.08	89	89	4.5
Contra Costa Pumping Plant #1	All	0.97	37	37	4.0
	Drought	0.94	46	44	3.9
Banks Pumping Plant	All	0.58	-22	-24	2.4
	Drought	0.60	-15	-19	2.5
Jones Pumping Plant	All	0.57	-29	-31	2.4
	Drought	0.55	-27	-31	2.3

Notes:

[a] All: Water years 1975-1991 represent the 16-year period modeled using DSM2. Drought: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

[b] % change indicates a negative change (increased concentrations) relative to baseline when values are positive and a positive change (lowered concentrations) relative to baseline when values are negative. Changes of 10% or more are highlighted.

[c] Exceedance Quotient - All concentrations exceed total maximum daily load guidance concentration of 0.24 mg/kg ww Hg.

Alt. - alternative

EX - Existing Conditions

mg/kg - milligram per kilogram

NAA-LLT - No Action Alternative Late Long Term

ww - wet weight

Table I-25a. Summary Table for Mercury Concentrations in 350 mm Largemouth Bass Fillets, and Comparisons to Baseline Conditions and Benchmark for Alternative 9. Estimates presented as based on Equation 1.

Location	Period [a]	Estimated Concentrations of Mercury (mg/kg, ww)	% Change In Mercury Concentrations Compared to Baseline[b]		Exceedance Quotients[c]
		Alt. 9	EX	NAA-LLT	Alt. 9
Delta Interior					
Mokelumne River (South Fork) at Staten Island	All	0.48	-7	-6	2.0
	Drought	0.43	-6	-5	1.8
San Joaquin River at Buckley Cove	All	0.56	-10	-13	2.3
	Drought	0.53	-17	-20	2.2
Franks Tract	All	0.54	23	23	2.2
	Drought	0.50	26	24	2.1
Old River at Rock Slough	All	0.60	33	31	2.5
	Drought	0.60	43	39	2.5
Western Delta					
Sacramento River at Emmaton	All	0.38	1	0	1.6
	Drought	0.37	0	0	1.5
SJR at Antioch	All	0.41	10	9	1.7
	Drought	0.37	9	8	1.5
Sacramento River at Mallard Island	All	0.30	4	2	1.3
	Drought	0.26	4	2	1.1
Major Diversions (Pumping Stations)					
North Bay Aqueduct at Barker Slough PP	All	0.38	-8	-7	1.6
	Drought	0.38	-8	-8	1.6
Contra Costa Pumping Plant #1	All	0.64	32	31	2.7
	Drought	0.64	41	39	2.7
Banks Pumping Plant	All	0.47	-6	-8	2.0
	Drought	0.45	-8	-10	1.9
Jones Pumping Plant	All	0.47	-11	-13	2.0
	Drought	0.45	-13	-16	1.9

Notes:

[a] All: Water years 1975-1991 represent the 16-year period modeled using DSM2. Drought: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

[b] % change indicates a negative change (increased concentrations) relative to baseline when values are positive and a positive change (lowered concentrations) relative to baseline when values are negative. Changes of 10% or more are highlighted.

[c] Exceedance Quotient - All concentrations exceed total maximum daily load guidance concentration of 0.24 mg/kg ww Hg.

Alt. - alternative

EX - Existing Conditions

mg/kg - milligram per kilogram

NAA-LLT - No Action Alternative Late Long Term

ww - wet weight

Table I-26b. Summary Table for Mercury Concentrations in 350 mm Largemouth Bass Fillets, and Comparisons to Baseline Conditions and Benchmark for Alternative 9. Estimates presented as based on Equation 2.

Location	Period [a]	Estimated Concentrations of Mercury (mg/kg, ww)	% Change In Mercury Concentrations Compared to Baseline[b]		Exceedance Quotients[c]
		Alt. 9	EX	NAA-LLT	Alt. 9
Delta Interior					
Mokelumne River (South Fork) at Staten Island	All	0.69	-10	-9	2.9
	Drought	0.59	-8	-8	2.5
San Joaquin River at Buckley Cove	All	0.86	-14	-18	3.6
	Drought	0.80	-22	-27	3.3
Franks Tract	All	0.82	34	34	3.4
	Drought	0.74	38	36	3.1
Old River at Rock Slough	All	0.95	49	46	4.0
	Drought	0.95	66	59	4.0
Western Delta					
Sacramento River at Emmaton	All	0.49	1	0	2.1
	Drought	0.47	0	0	2.0
SJR at Antioch	All	0.56	14	13	2.3
	Drought	0.48	13	12	2.0
Sacramento River at Mallard Island	All	0.36	5	3	1.5
	Drought	0.29	5	3	1.2
Major Diversions (Pumping Stations)					
North Bay Aqueduct at Barker Slough PP	All	0.51	-11	-10	2.1
	Drought	0.51	-12	-11	2.1
Contra Costa Pumping Plant #1	All	1.04	47	47	4.3
	Drought	1.03	62	59	4.3
Banks Pumping Plant	All	0.68	-9	-11	2.8
	Drought	0.63	-11	-14	2.6
Jones Pumping Plant	All	0.68	-15	-18	2.8
	Drought	0.63	-18	-22	2.6

Notes:

[a] All: Water years 1975-1991 represent the 16-year period modeled using DSM2. Drought: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

[b] % change indicates a negative change (increased concentrations) relative to baseline when values are positive and a positive change (lowered concentrations) relative to baseline when values are negative. Changes of 10% or more are highlighted.

[c] Exceedance Quotient - All concentrations exceed total maximum daily load guidance concentration of 0.24 mg/kg ww Hg.

Alt. - alternative

EX - Existing Conditions

mg/kg - milligram per kilogram

NAA-LLT - No Action Alternative Late Long Term

ww - wet weight

FIGURES

Figure I-1. Predictive Model Showing the Relationship Between DSM2 Modeled Estimates of Waterborne Methylmercury versus Measured Concentrations of Mercury in Largemouth Bass Fillets, Normalized to 350-mm-length Fish. 1999 and 2000 data.

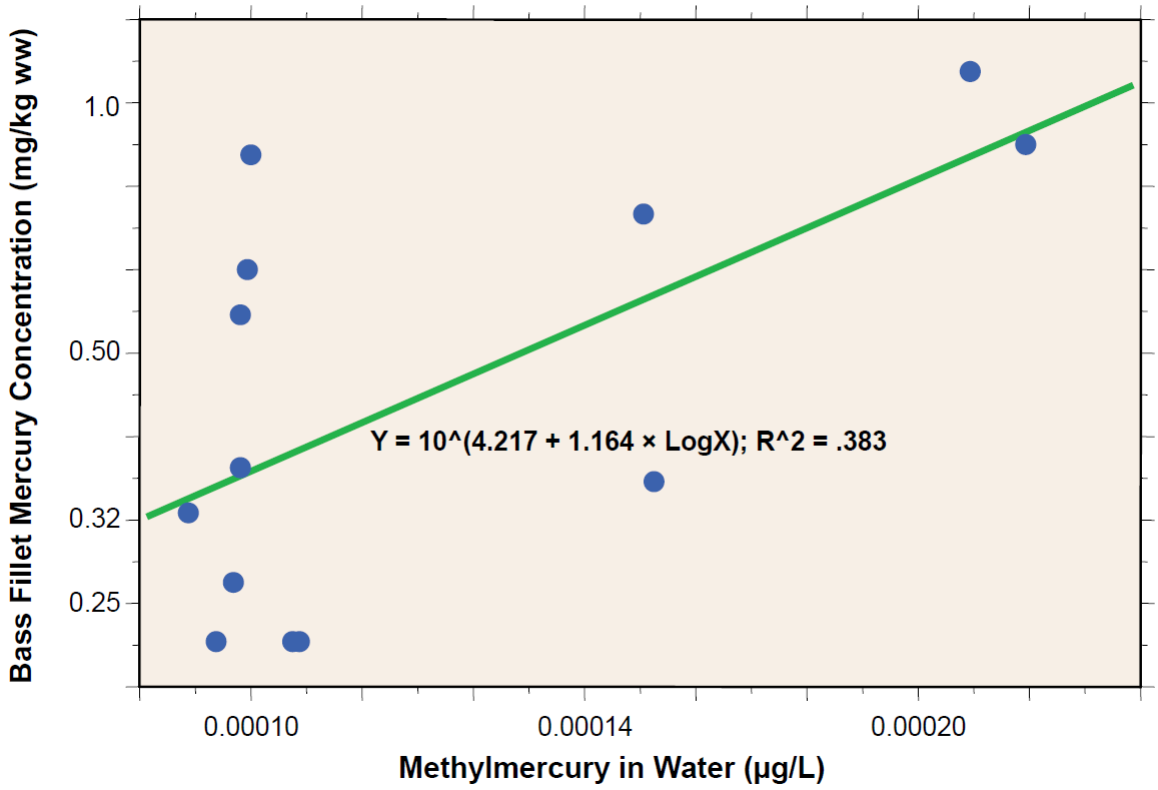
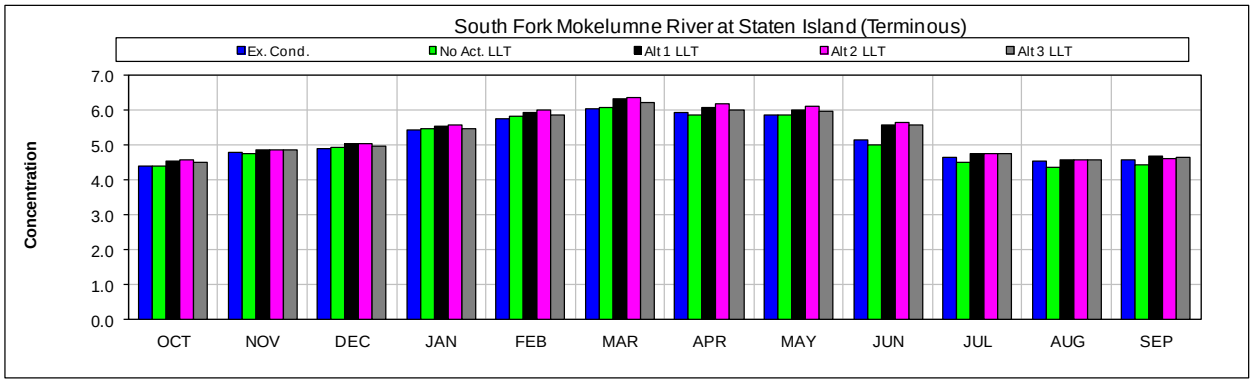
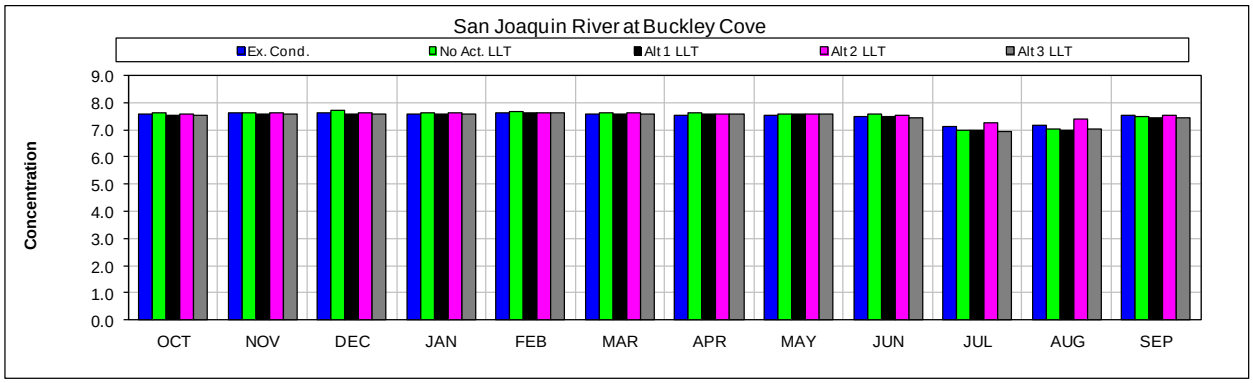
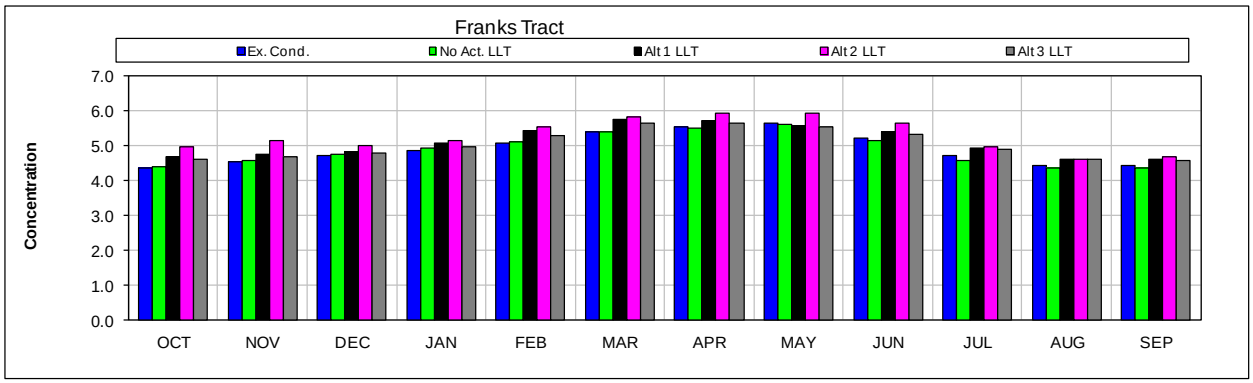
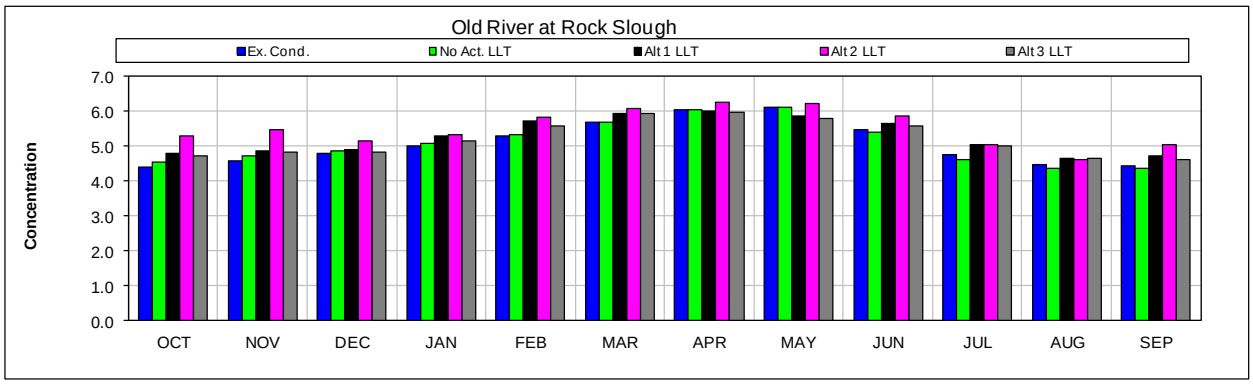


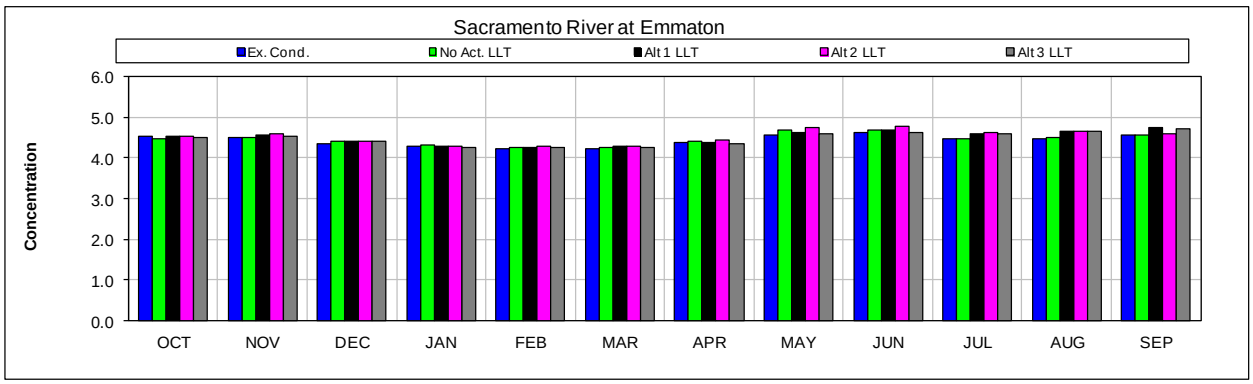
Figure I- 2. Modeled Monthly Concentrations of Mercury (ng/L) in Water for Existing Conditions, No Action Alternative Late Long Term, and Alternatives 1, 2, and 3.










Sacramento River at Emmaton
Ex. Cond.
No Act. LLT
Alt 1 LLT
Alt 2 LLT
Alt 3 LLT
Concentration
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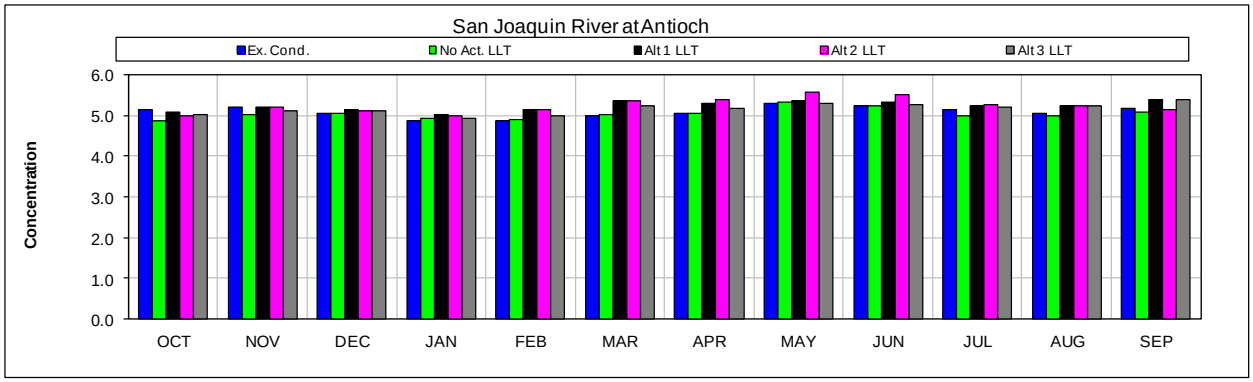
5.0
4.0
3.0
2.0
1.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

1


San Joaquin River at Antioch
Ex. Cond.
No Act. LLT
Alt 1 LLT
Alt 2 LLT
Alt 3 LLT
Concentration
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5.0
4.0
3.0
2.0
1.0
0.0
OCT
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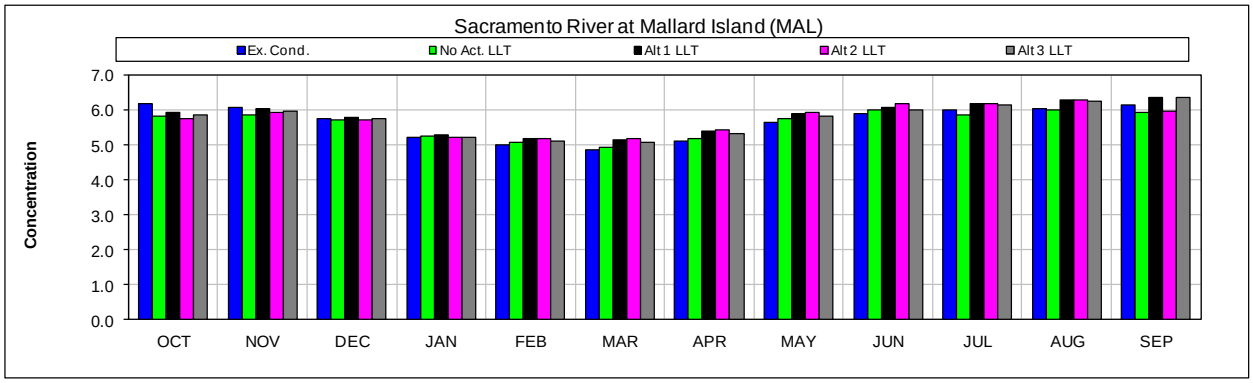
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

2


Sacramento River at Mallard Island (MAL)
Ex. Cond.
No Act. LLT
Alt 1 LLT
Alt 2 LLT
Alt 3 LLT
Concentration
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6.0
5.0
4.0
3.0
2.0
1.0
0.0
OCT
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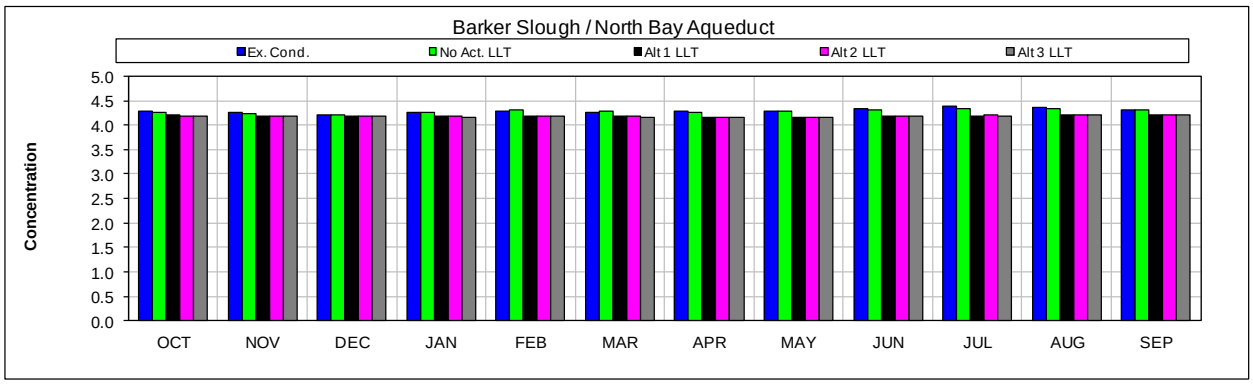
AUG
SEP

3


Barker Slough / North Bay Aqueduct
Ex. Cond.
No Act. LLT
Alt 1 LLT
Alt 2 LLT
Alt 3 LLT
Concentration
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4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
OCT
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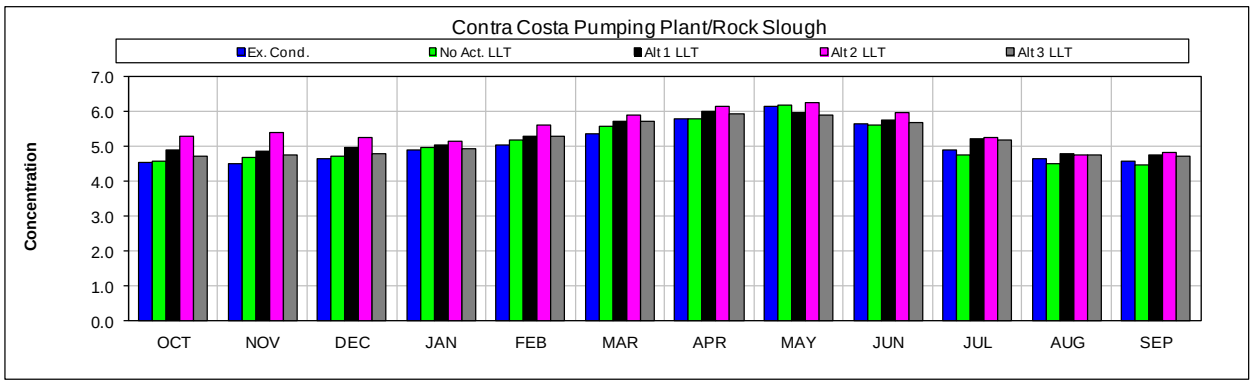
SEP

4


Contra Costa Pumping Plant/Rock Slough
Ex. Cond.
No Act. LLT
Alt 1 LLT
Alt 2 LLT
Alt 3 LLT
Concentration
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6.0
5.0
4.0
3.0
2.0
1.0
0.0
OCT
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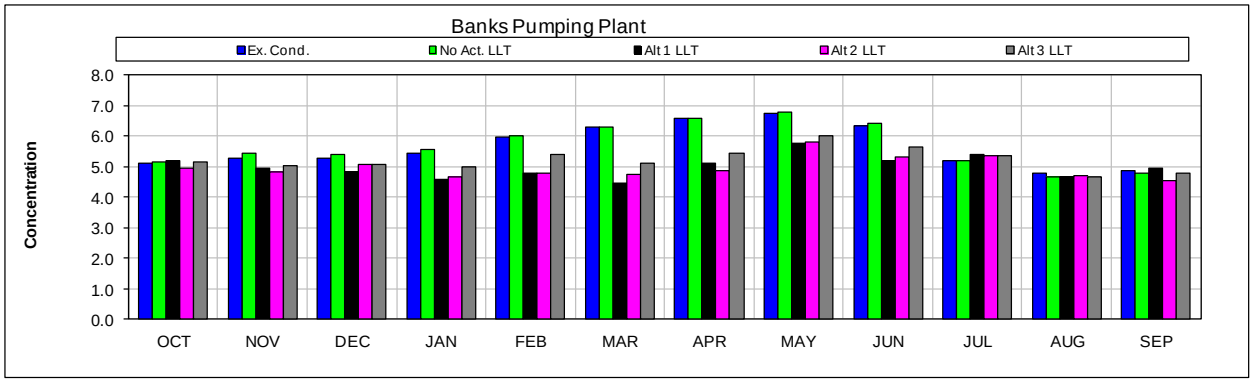
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

1


Banks Pumping Plant
Ex. Cond.
No Act. LLT
Alt 1 LLT
Alt 2 LLT
Alt 3 LLT
Concentration
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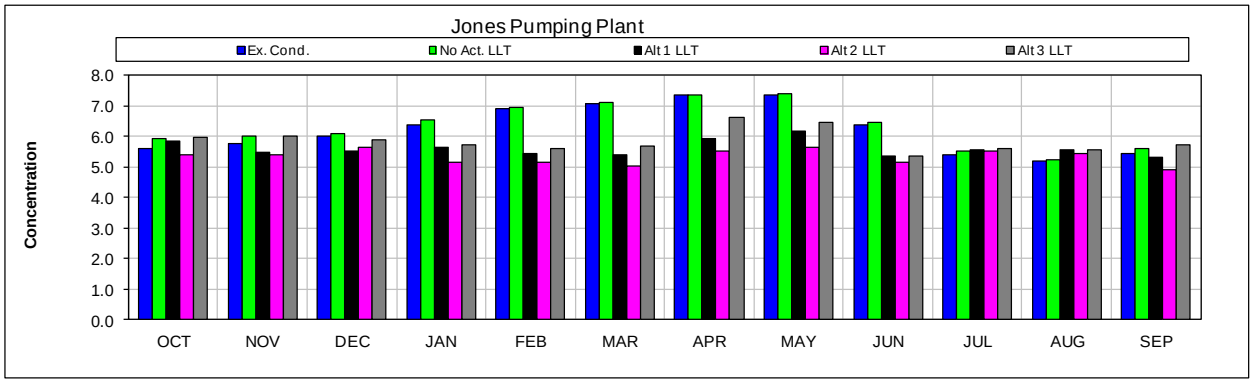
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

2


Jones Pumping Plant
Ex. Cond.
No Act. LLT
Alt 1 LLT
Alt 2 LLT
Alt 3 LLT
Concentration
8.0
7.0
6.0
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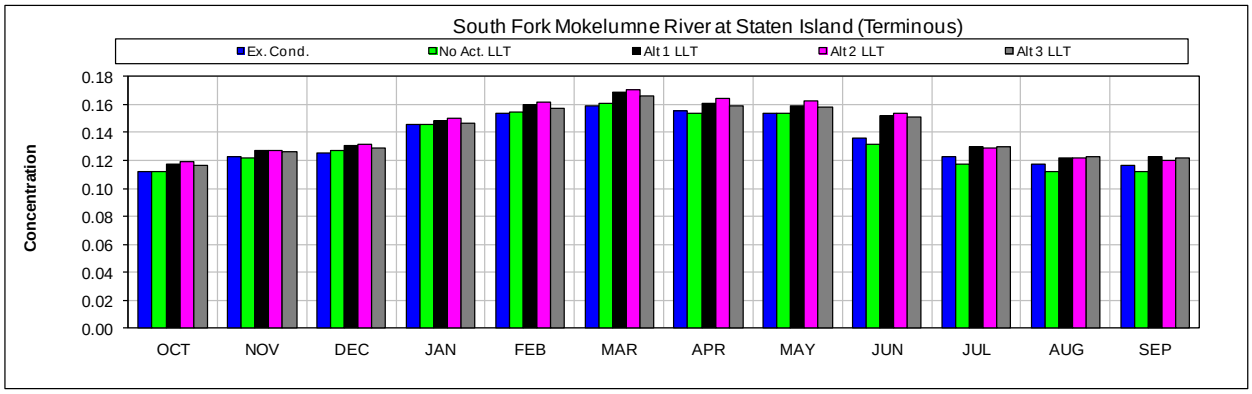
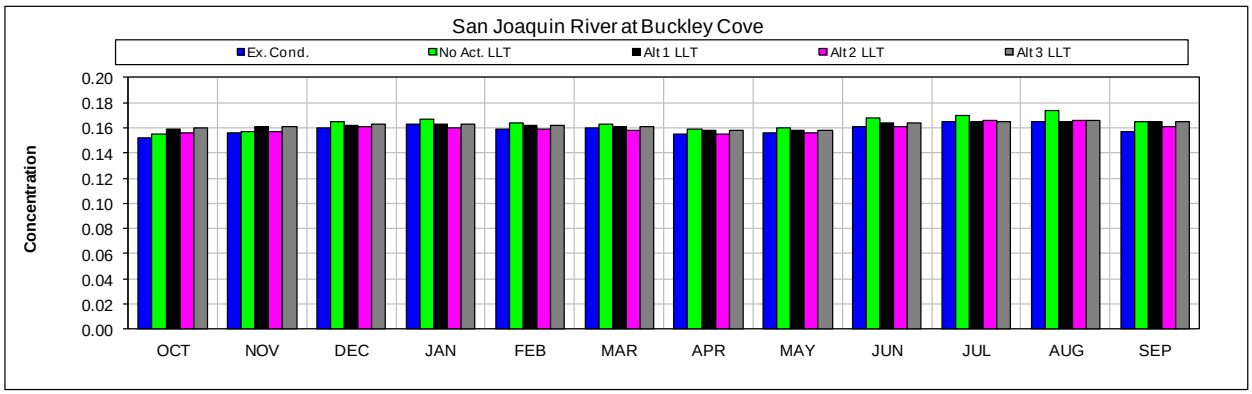
4.0
3.0
2.0
1.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

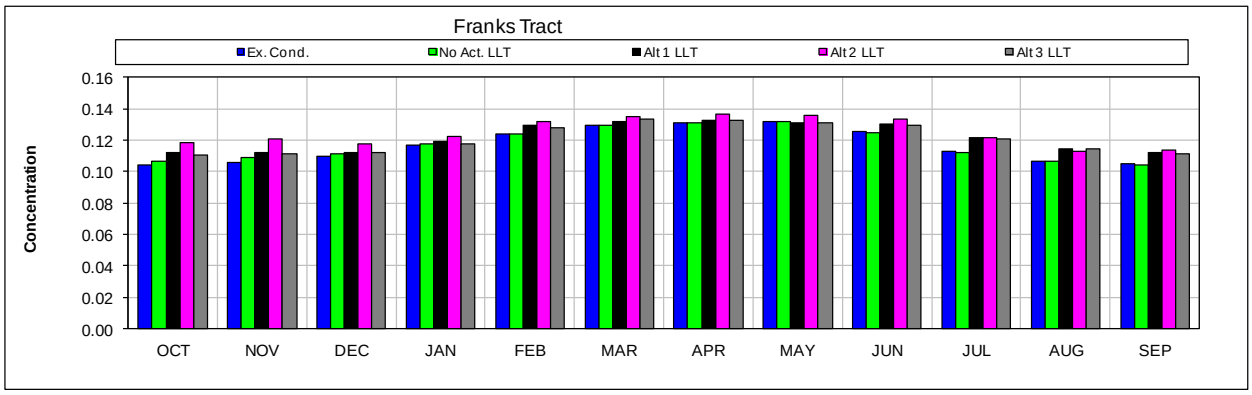
3

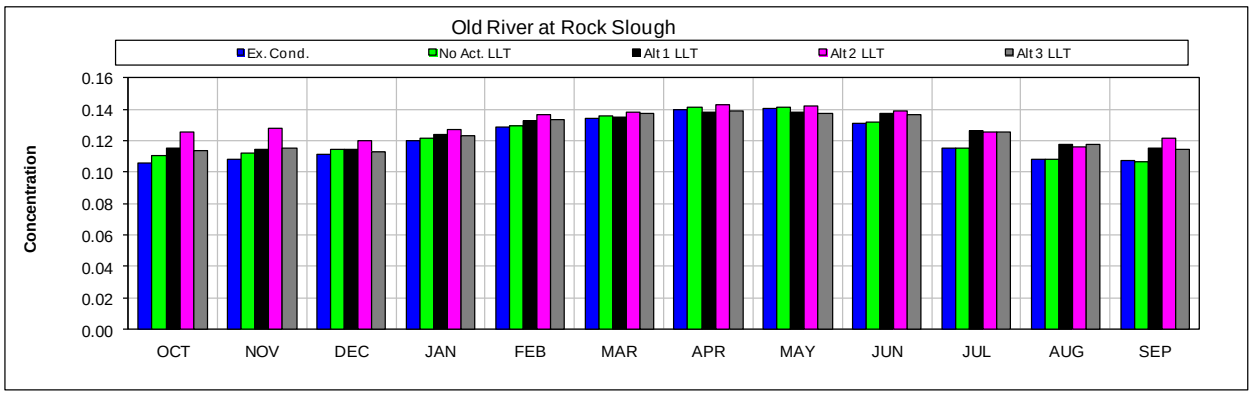
4

Figure I-3. Modeled Monthly Concentrations of Methylmercury (ng/L) in Water for Existing Conditions, No Action Alternative Late Long Term, and Alternatives 1, 2, and 3.

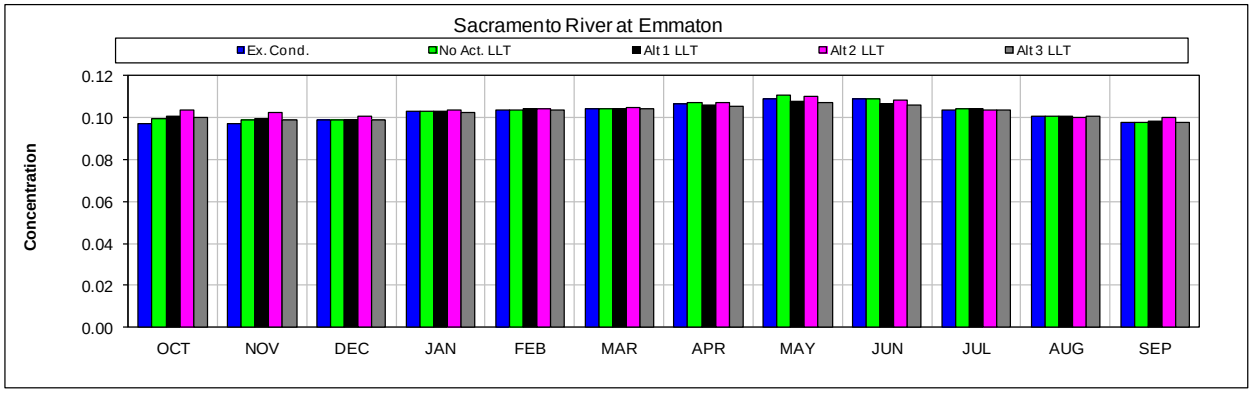




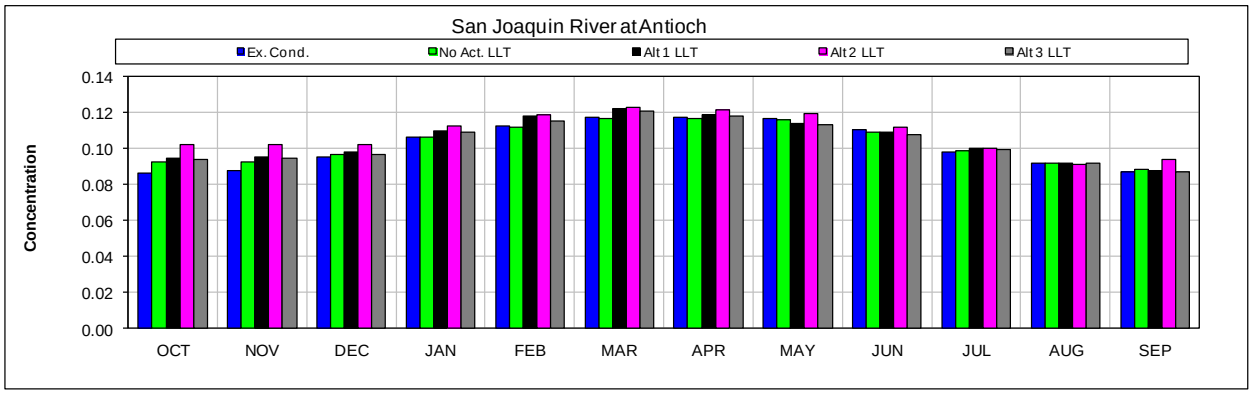



Old River at Rock Slough
Ex. Cond.
No Act. LLT
Alt 1 LLT
Alt 2 LLT
Alt 3 LLT
Concentration
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

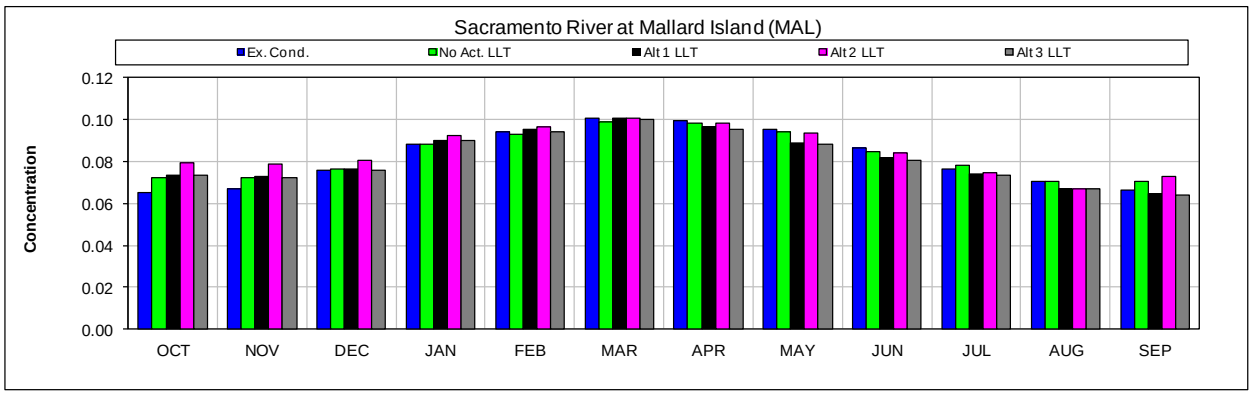
1


Sacramento River at Emmaton
Ex. Cond.
No Act. LLT
Alt 1 LLT
Alt 2 LLT
Alt 3 LLT
Concentration
0.12
0.10
0.08
0.06
0.04
0.02
0.00
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

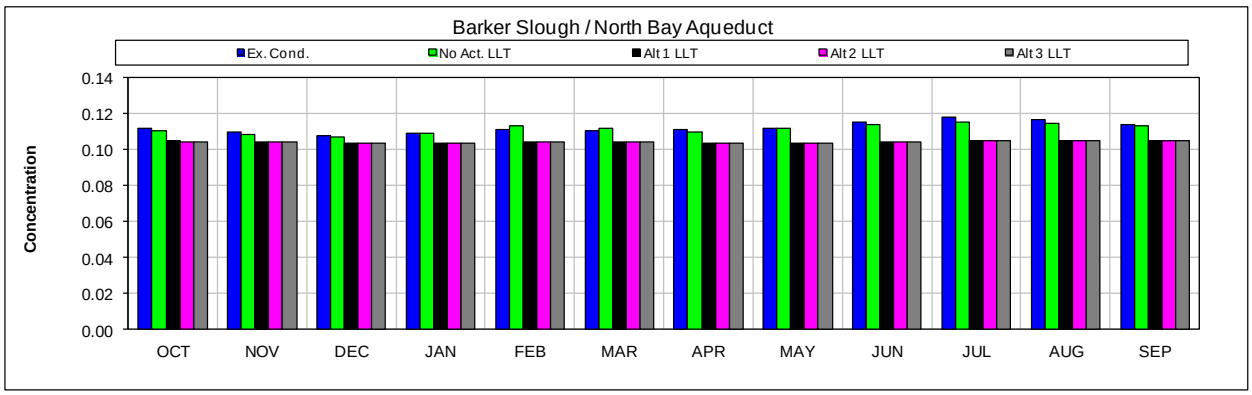
2


San Joaquin River at Antioch
Ex. Cond.
No Act. LLT
Alt 1 LLT
Alt 2 LLT
Alt 3 LLT
Concentration
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

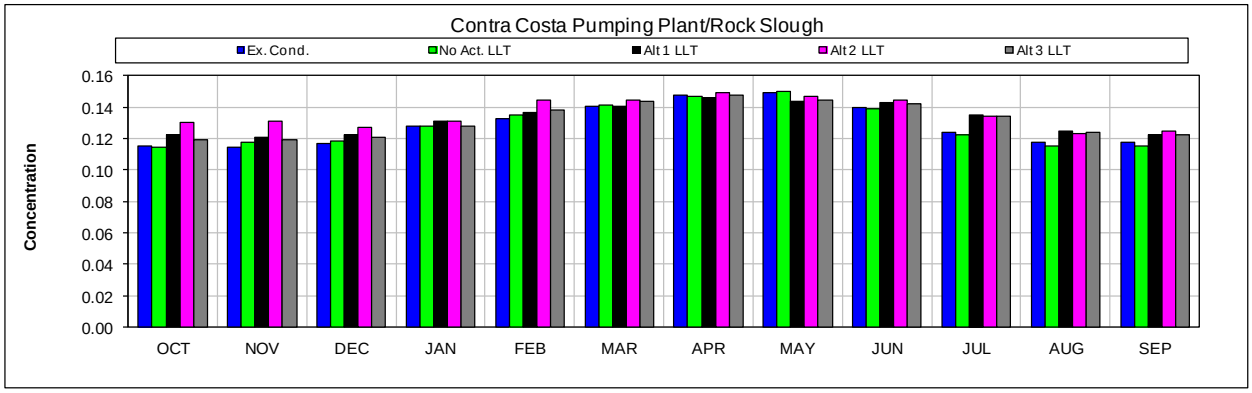
3


Sacramento River at Mallard Island (MAL)
Ex. Cond.
No Act. LLT
Alt 1 LLT
Alt 2 LLT
Alt 3 LLT
Concentration
0.12
0.10
0.08
0.06
0.04
0.02
0.00
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

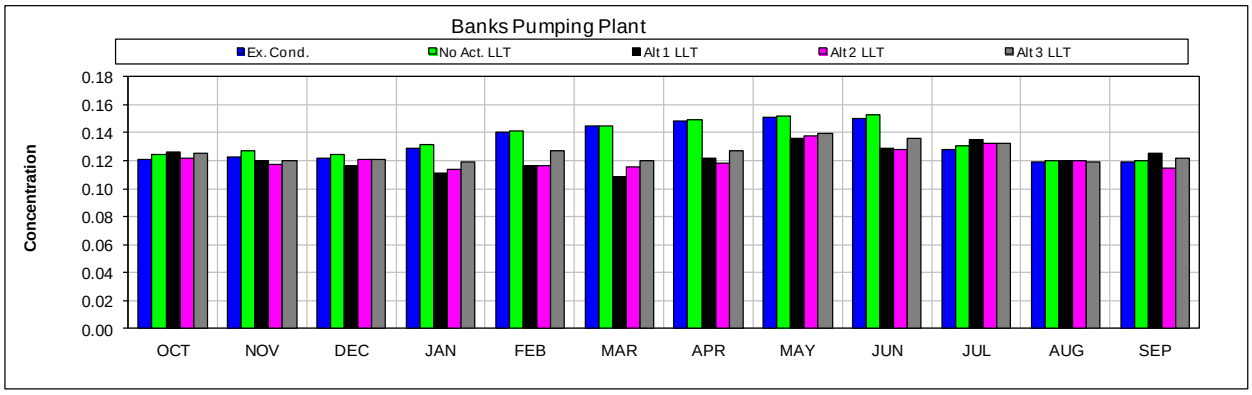
4


Barker Slough / North Bay Aqueduct
Ex. Cond.
No Act. LLT
Alt 1 LLT
Alt 2 LLT
Alt 3 LLT
Concentration
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

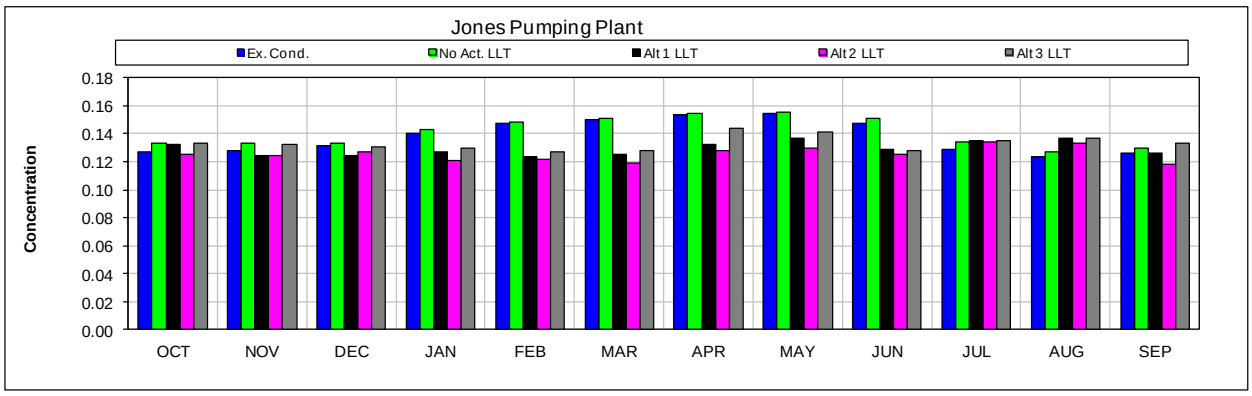
1


Contra Costa Pumping Plant/Rock Slough
Ex. Cond.
No Act. LLT
Alt 1 LLT
Alt 2 LLT
Alt 3 LLT
Concentration
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

2

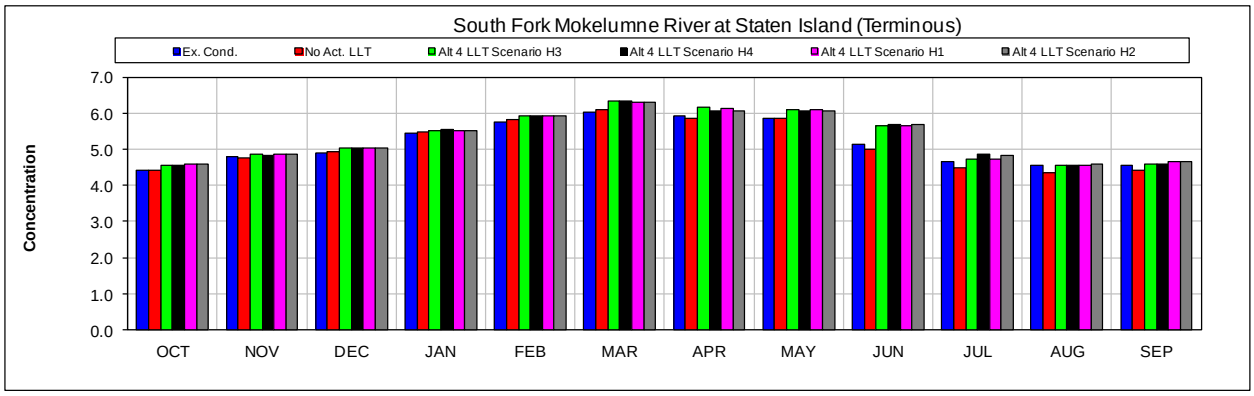

Banks Pumping Plant
Ex. Cond.
No Act. LLT
Alt 1 LLT
Alt 2 LLT
Alt 3 LLT
Concentration
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

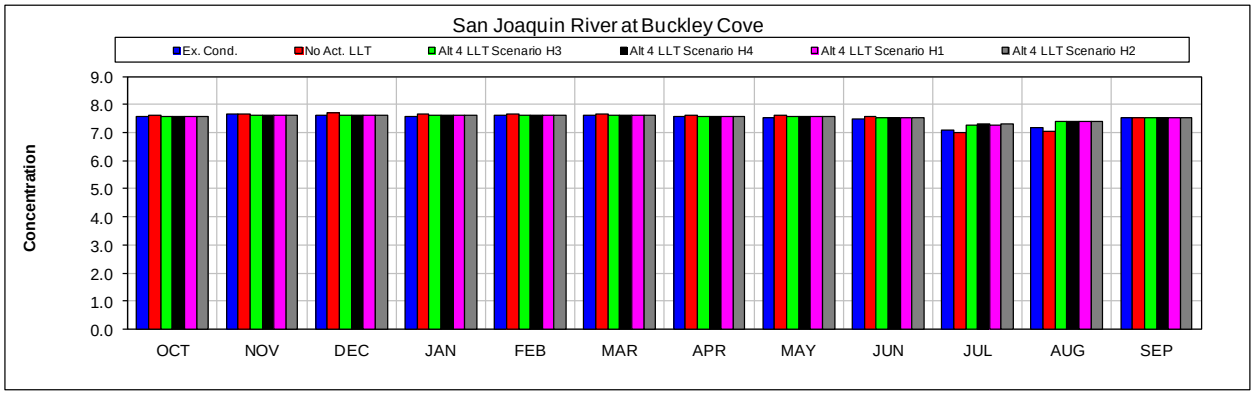
3

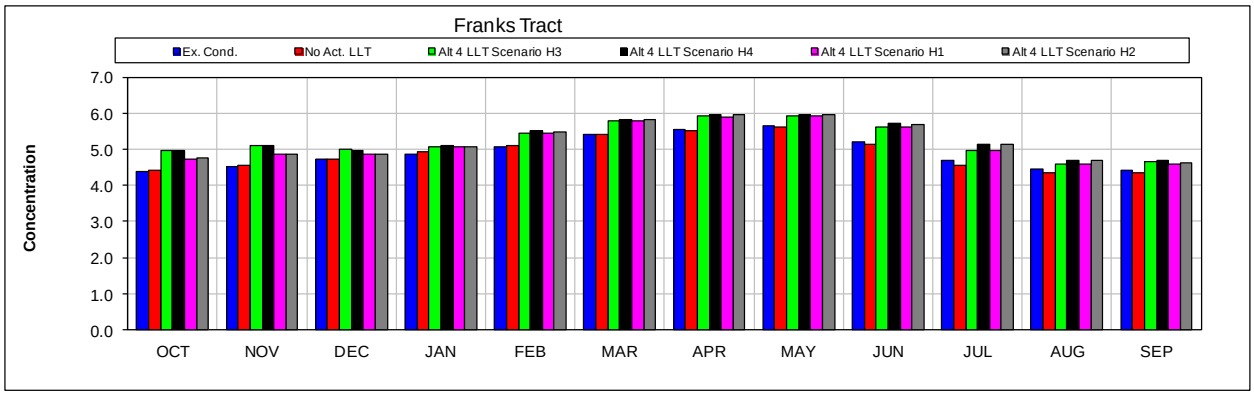

Jones Pumping Plant
Ex. Cond.
No Act. LLT
Alt 1 LLT
Alt 2 LLT
Alt 3 LLT
Concentration
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

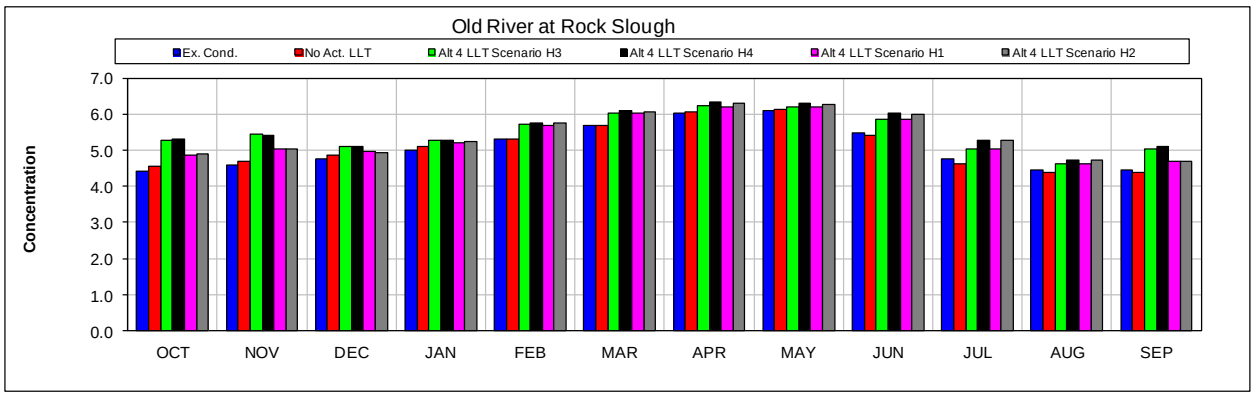
4
5

Figure I- 4. Modeled Monthly Concentrations of Mercury (ng/L) in Water for Existing Conditions, No Action Alternative Late Long Term, and Alternatives 4, Scenarios H1, H2, H3, H4.

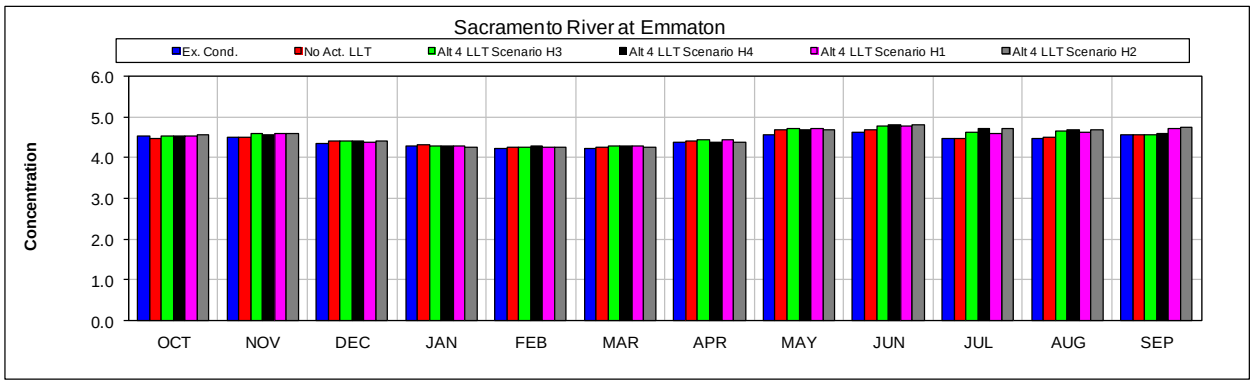




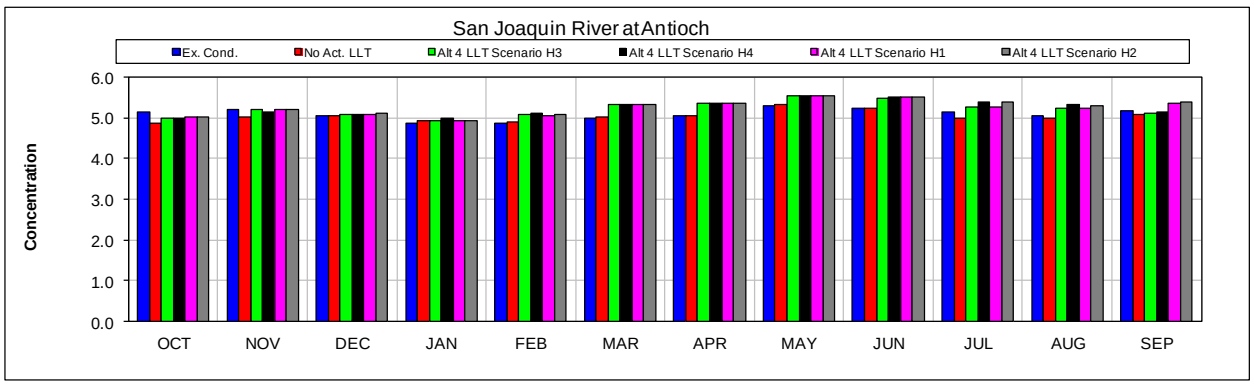



Old River at Rock Slough
Ex. Cond.
No Act. LLT
Alt 4 LLT Scenario H3
Alt 4 LLT Scenario H4
Alt 4 LLT Scenario H1
Alt 4 LLT Scenario H2
Concentration
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

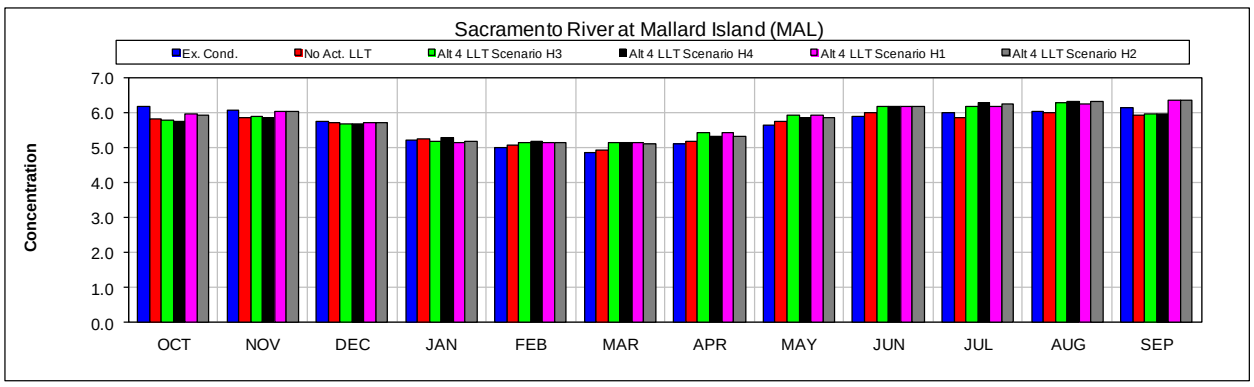
1


Sacramento River at Emmaton
Ex. Cond.
No Act. LLT
Alt 4 LLT Scenario H3
Alt 4 LLT Scenario H4
Alt 4 LLT Scenario H1
Alt 4 LLT Scenario H2
Concentration
6.0
5.0
4.0
3.0
2.0
1.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

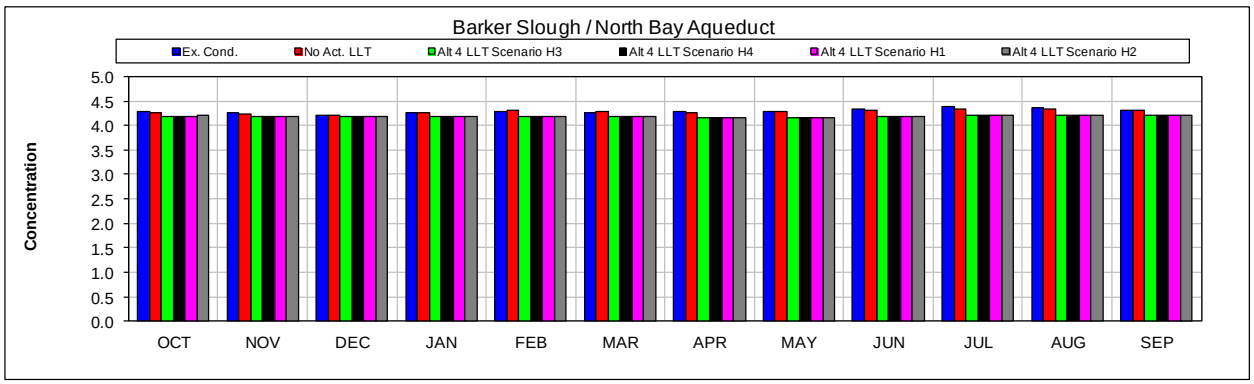
2


San Joaquin River at Antioch
Ex. Cond.
No Act. LLT
Alt 4 LLT Scenario H3
Alt 4 LLT Scenario H4
Alt 4 LLT Scenario H1
Alt 4 LLT Scenario H2
Concentration
6.0
5.0
4.0
3.0
2.0
1.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

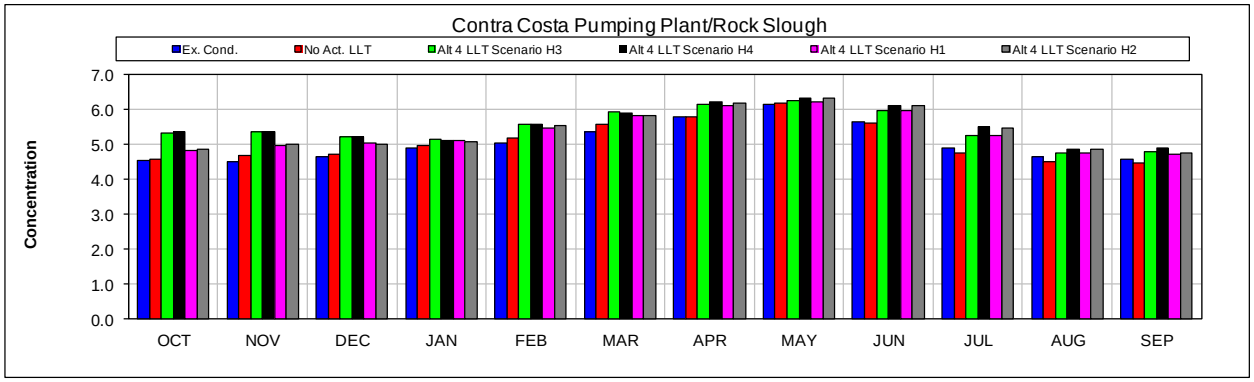
3


Sacramento River at Mallard Island (MAL)
Ex. Cond.
No Act. LLT
Alt 4 LLT Scenario H3
Alt 4 LLT Scenario H4
Alt 4 LLT Scenario H1
Alt 4 LLT Scenario H2
Concentration
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

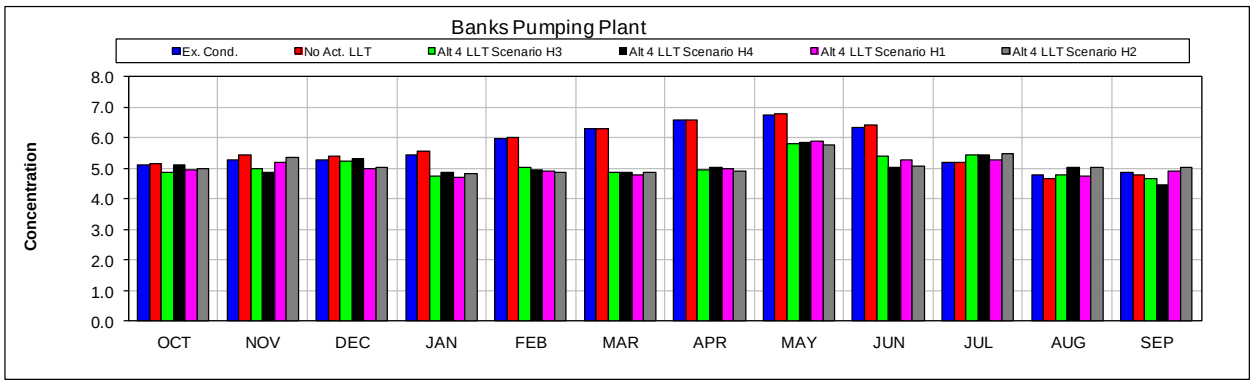
4


Barker Slough / North Bay Aqueduct
Ex. Cond.
No Act. LLT
Alt 4 LLT Scenario H3
Alt 4 LLT Scenario H4
Alt 4 LLT Scenario H1
Alt 4 LLT Scenario H2
Concentration
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

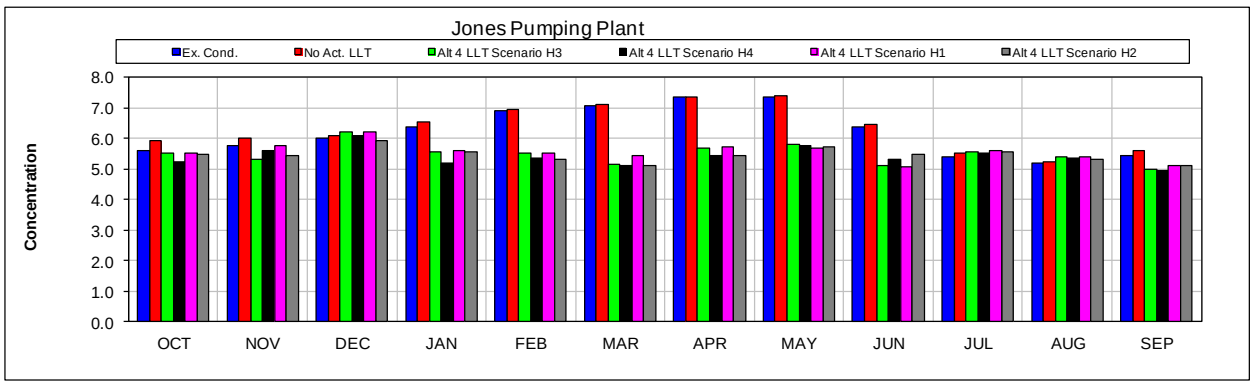
1


Contra Costa Pumping Plant/Rock Slough
Ex. Cond.
No Act. LLT
Alt 4 LLT Scenario H3
Alt 4 LLT Scenario H4
Alt 4 LLT Scenario H1
Alt 4 LLT Scenario H2
Concentration
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

2


Banks Pumping Plant
Ex. Cond.
No Act. LLT
Alt 4 LLT Scenario H3
Alt 4 LLT Scenario H4
Alt 4 LLT Scenario H1
Alt 4 LLT Scenario H2
Concentration
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

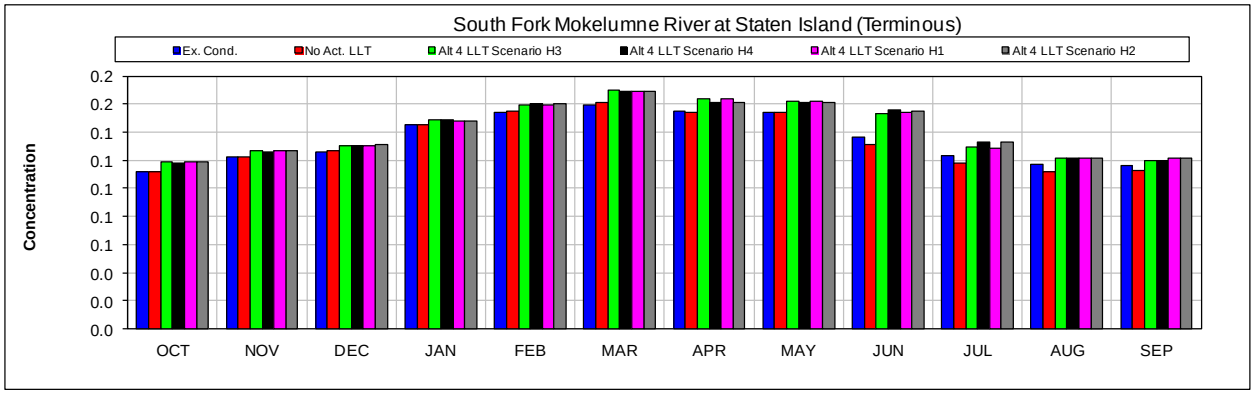
3

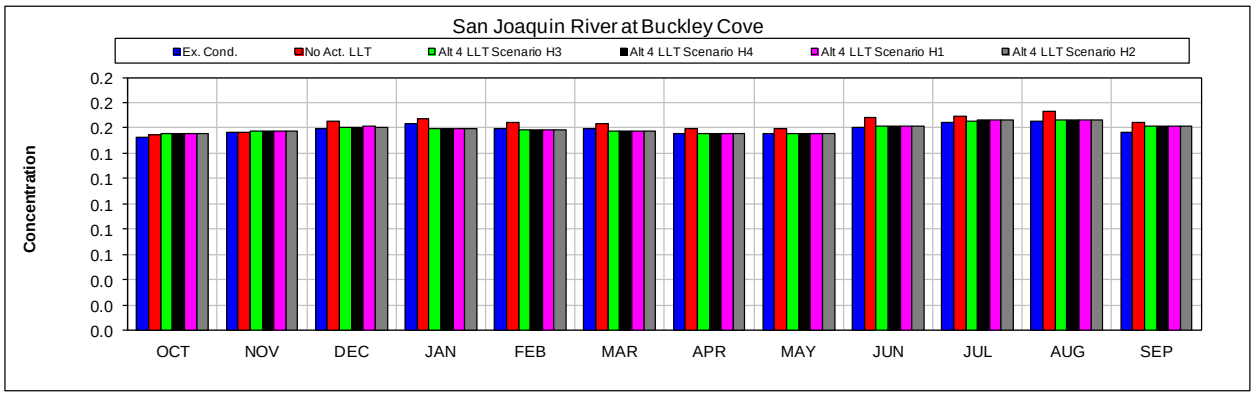

Jones Pumping Plant
Ex. Cond.
No Act. LLT
Alt 4 LLT Scenario H3
Alt 4 LLT Scenario H4
Alt 4 LLT Scenario H1
Alt 4 LLT Scenario H2
Concentration
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

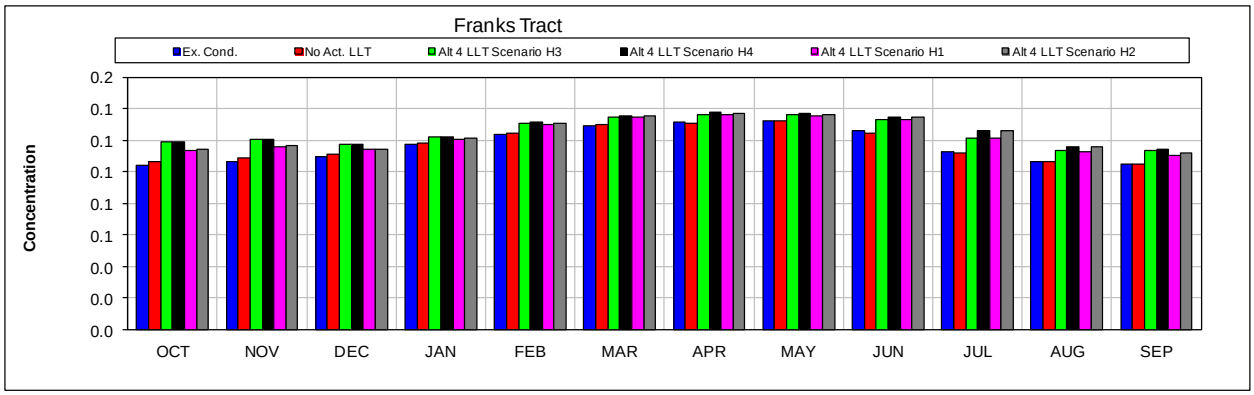
4

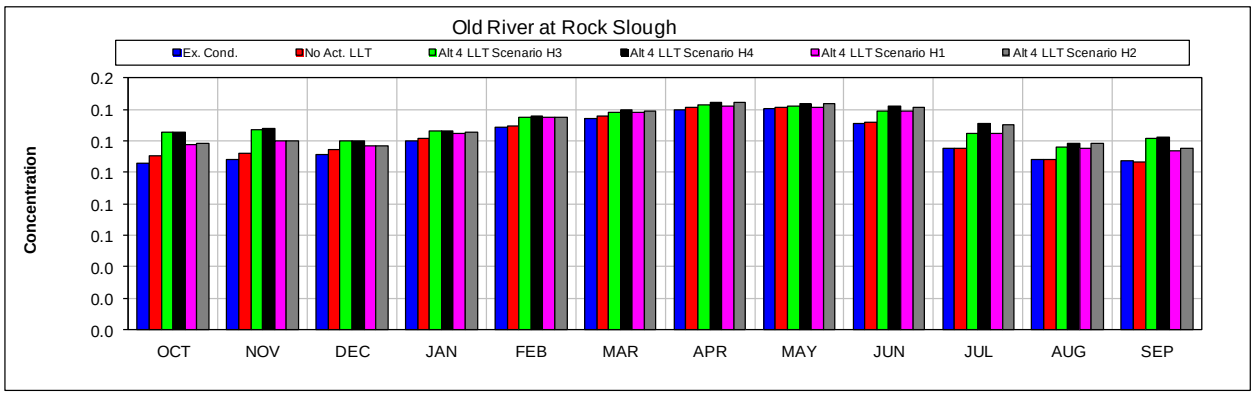
5

Figure I- 5. Modeled Monthly Concentrations of Methylmercury (ng/L) in Water for Existing Conditions, No Action Alternative Late Long Term, and Alternatives 4, Scenarios H1, H2, H3, H4.

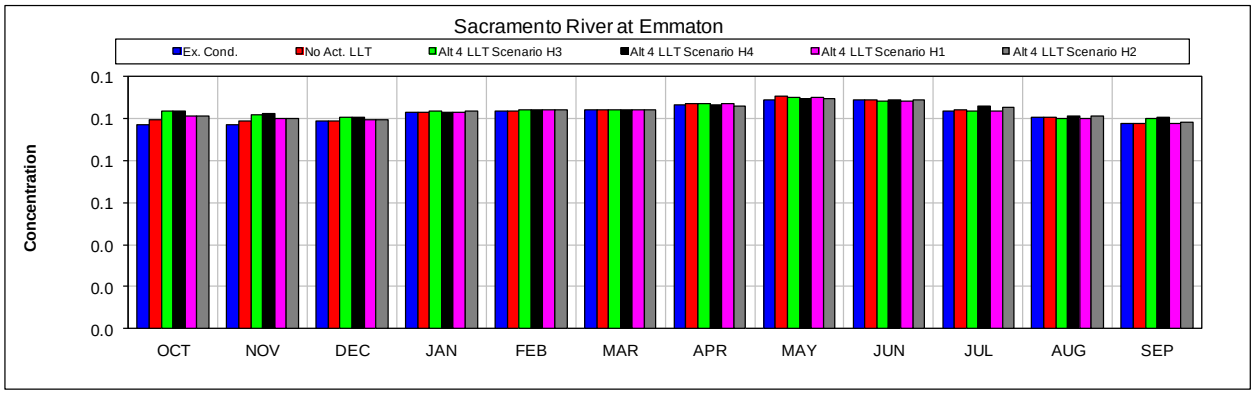




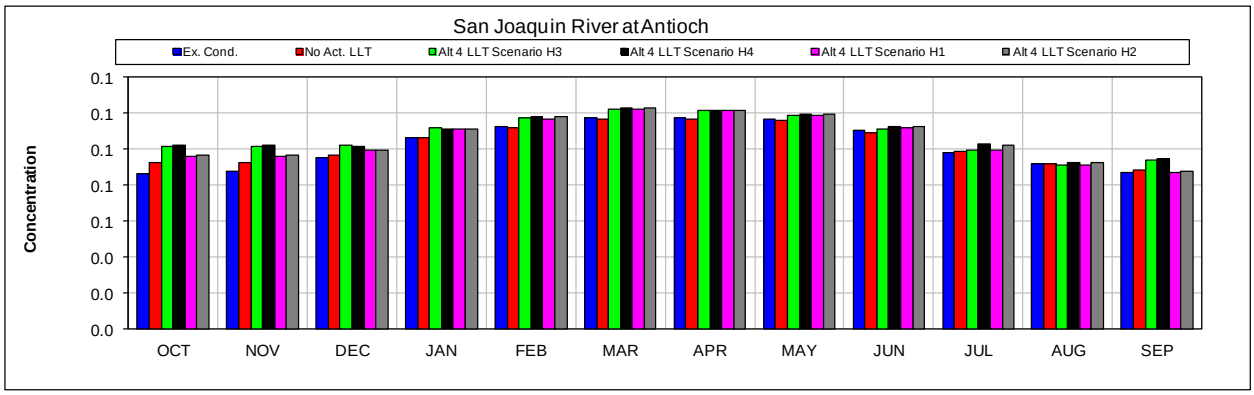



Old River at Rock Slough
Ex. Cond.
No Act. LLT
Alt 4 LLT Scenario H3
Alt 4 LLT Scenario H4
Alt 4 LLT Scenario H1
Alt 4 LLT Scenario H2
Concentration
0.2
0.1
0.1
0.1
0.1
0.1
0.0
0.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

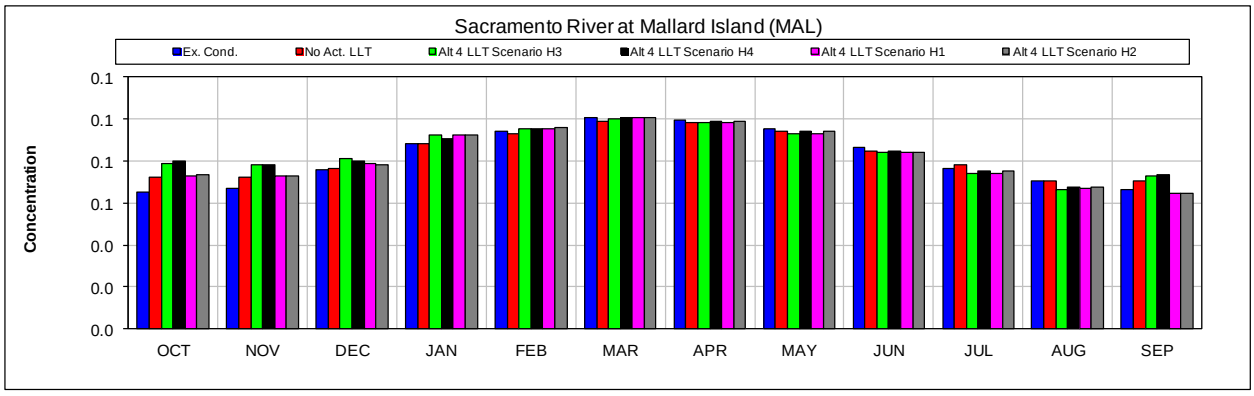
1


Sacramento River at Emmaton
Ex. Cond.
No Act. LLT
Alt 4 LLT Scenario H3
Alt 4 LLT Scenario H4
Alt 4 LLT Scenario H1
Alt 4 LLT Scenario H2
Concentration
0.1
0.1
0.1
0.1
0.0
0.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

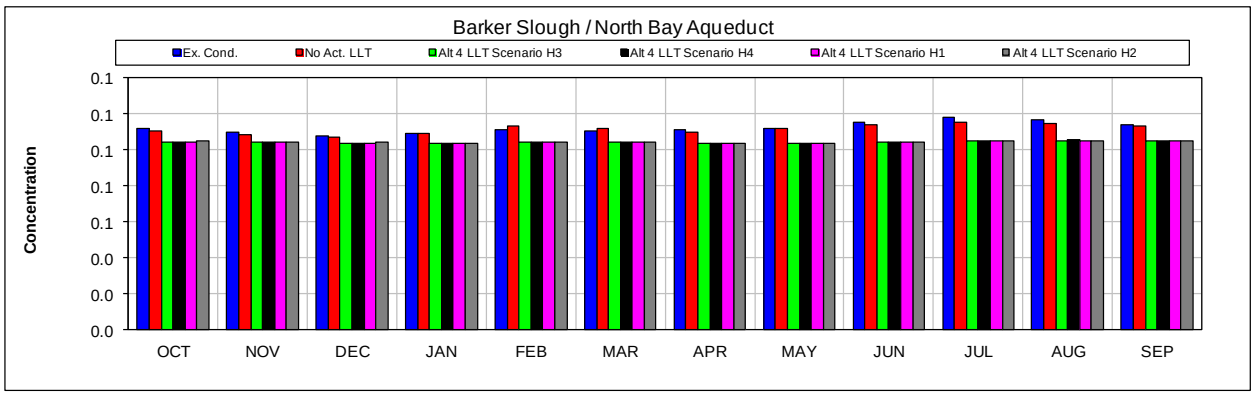
2


San Joaquin River at Antioch
Ex. Cond.
No Act. LLT
Alt 4 LLT Scenario H3
Alt 4 LLT Scenario H4
Alt 4 LLT Scenario H1
Alt 4 LLT Scenario H2
Concentration
0.1
0.1
0.1
0.1
0.1
0.0
0.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

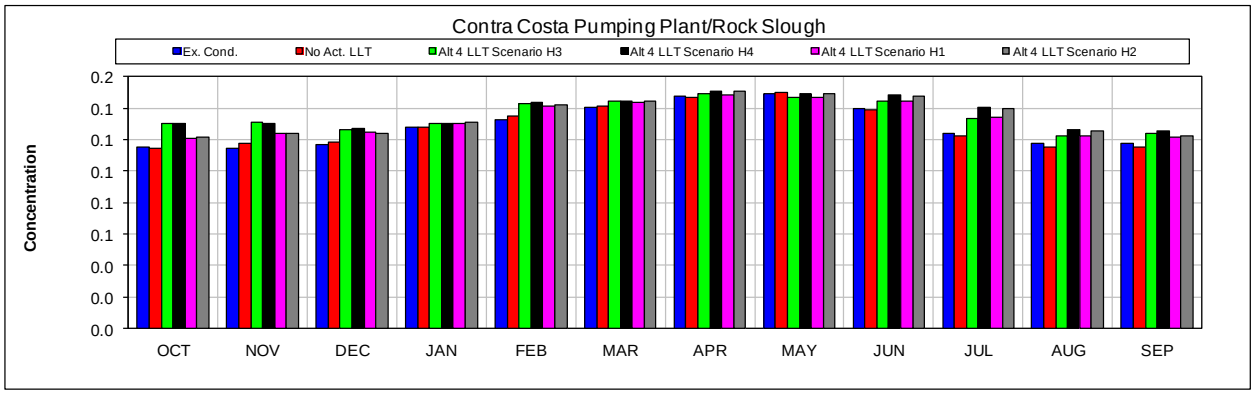
3


Sacramento River at Mallard Island (MAL)
Ex. Cond.
No Act. LLT
Alt 4 LLT Scenario H3
Alt 4 LLT Scenario H4
Alt 4 LLT Scenario H1
Alt 4 LLT Scenario H2
Concentration
0.1
0.1
0.1
0.1
0.0
0.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

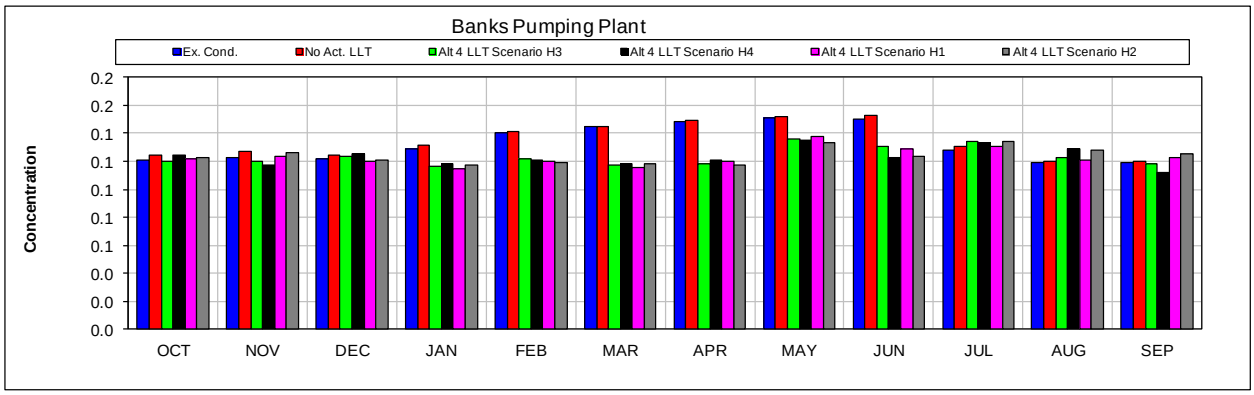
4


Barker Slough / North Bay Aqueduct
Ex. Cond.
No Act. LLT
Alt 4 LLT Scenario H3
Alt 4 LLT Scenario H4
Alt 4 LLT Scenario H1
Alt 4 LLT Scenario H2
Concentration
0.1
0.1
0.1
0.1
0.1
0.0
0.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

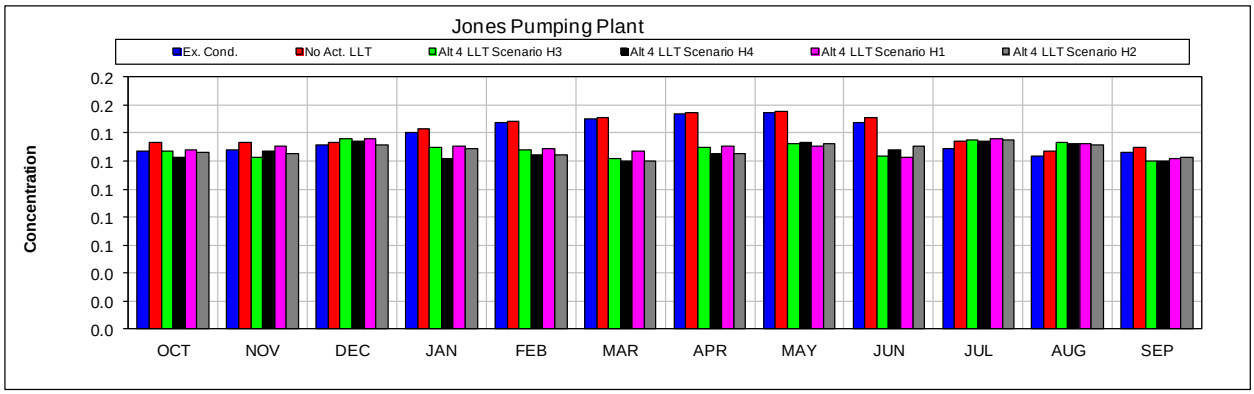
1


Contra Costa Pumping Plant/Rock Slough
Ex. Cond.
No Act. LLT
Alt 4 LLT Scenario H3
Alt 4 LLT Scenario H4
Alt 4 LLT Scenario H1
Alt 4 LLT Scenario H2
Concentration
0.2
0.1
0.1
0.1
0.1
0.1
0.0
0.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

2


Banks Pumping Plant
Ex. Cond.
No Act. LLT
Alt 4 LLT Scenario H3
Alt 4 LLT Scenario H4
Alt 4 LLT Scenario H1
Alt 4 LLT Scenario H2
Concentration
0.2
0.2
0.1
0.1
0.1
0.1
0.1
0.0
0.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

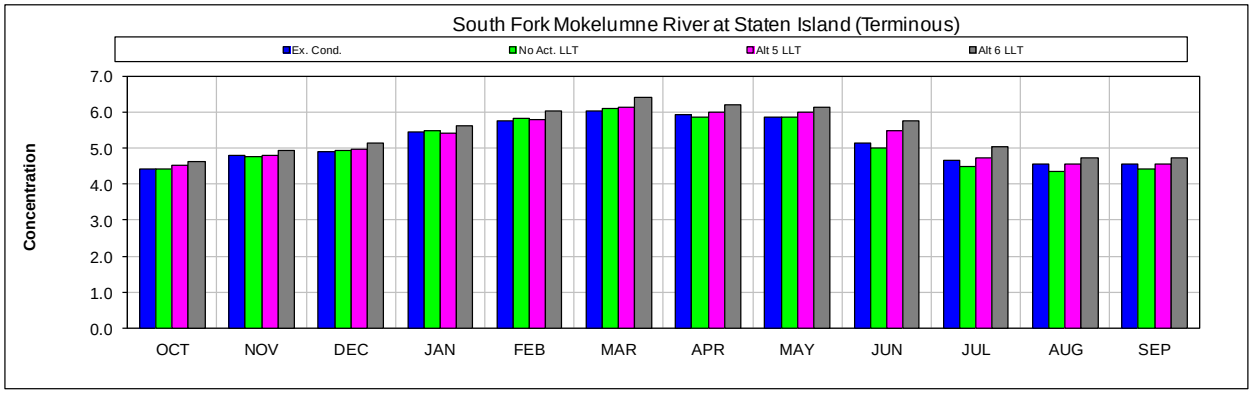
3

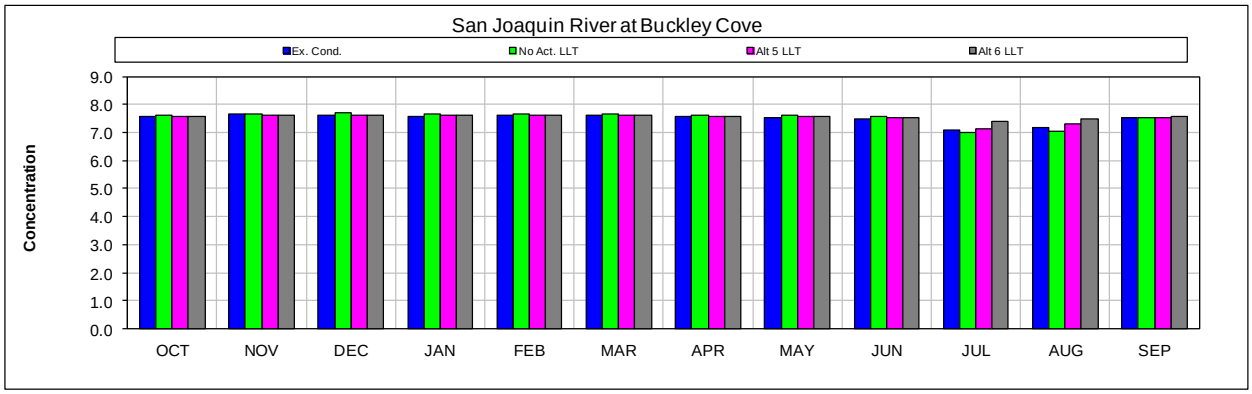

Jones Pumping Plant
Ex. Cond.
No Act. LLT
Alt 4 LLT Scenario H3
Alt 4 LLT Scenario H4
Alt 4 LLT Scenario H1
Alt 4 LLT Scenario H2
Concentration
0.2
0.2
0.1
0.1
0.1
0.1
0.1
0.0
0.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

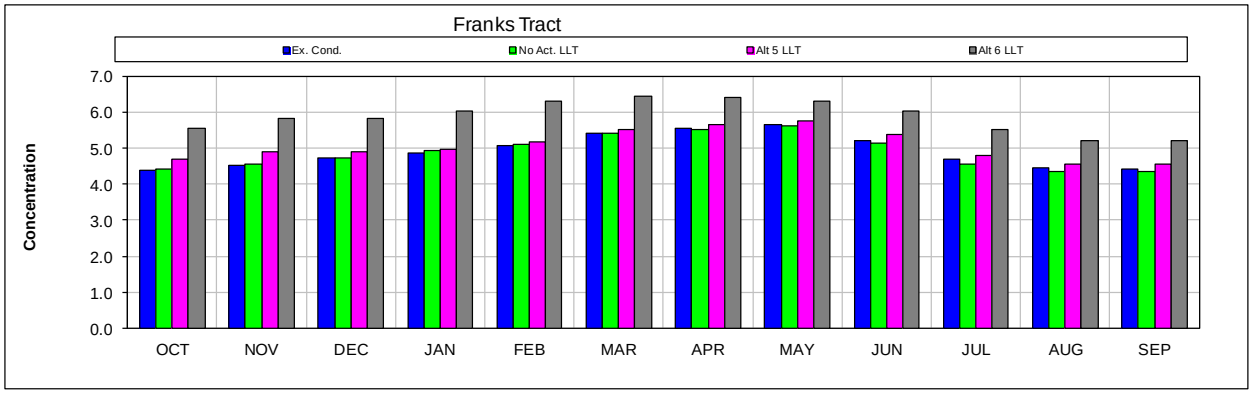
4

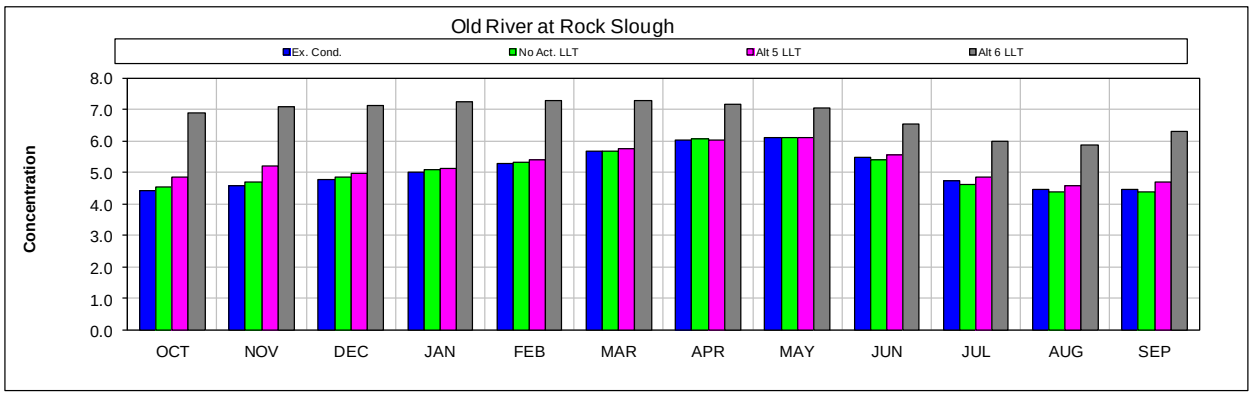
5

Figure I- 6. Modeled Monthly Concentrations of Mercury (ng/L) in Water for Existing Conditions, No Action Alternative Late Long Term, and Alternatives 5 and 6.

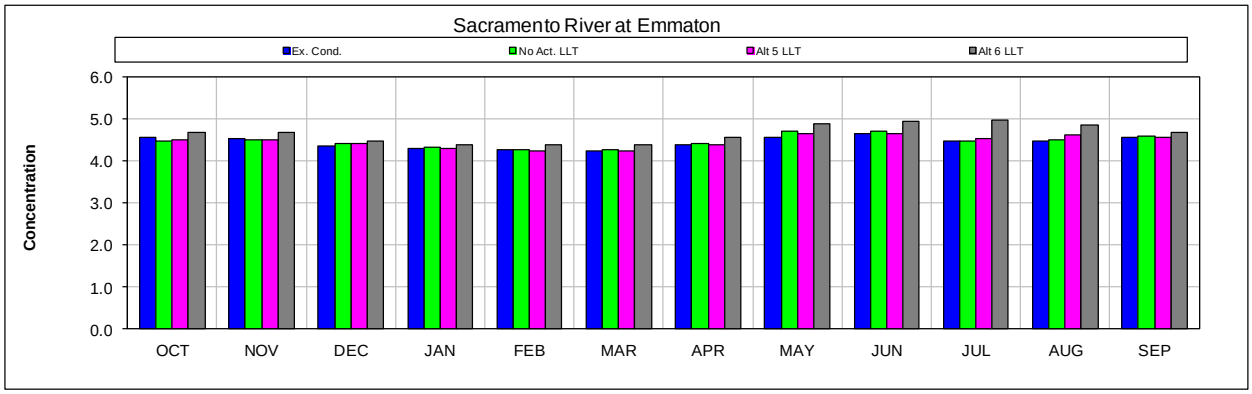




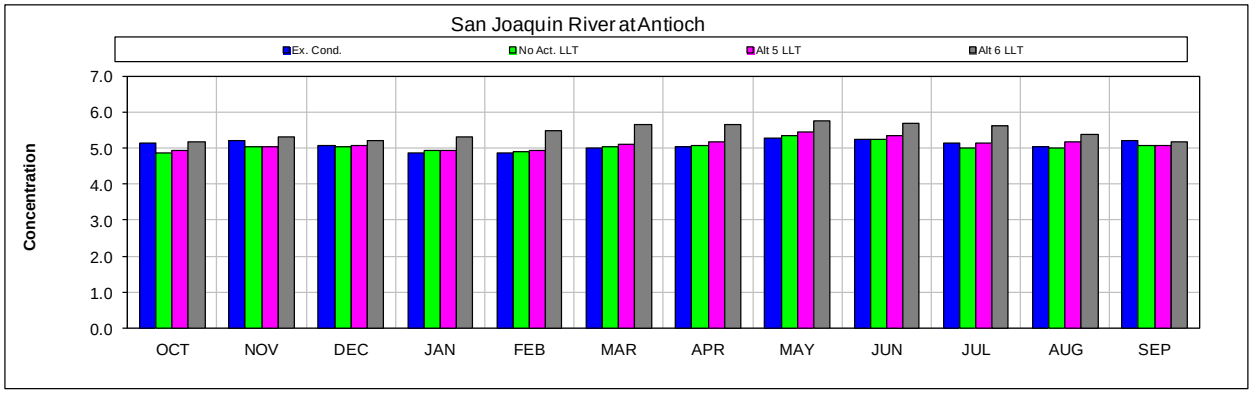



Old River at Rock Slough
Ex. Cond.
No Act. LLT
Alt 5 LLT
Alt 6 LLT
Concentration
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

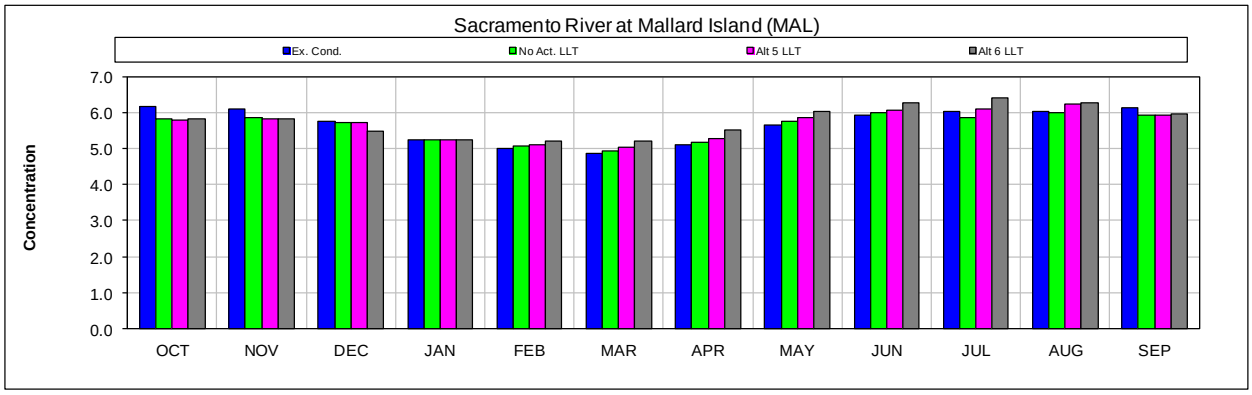
1


Sacramento River at Emmaton
Ex. Cond.
No Act. LLT
Alt 5 LLT
Alt 6 LLT
Concentration
6.0
5.0
4.0
3.0
2.0
1.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

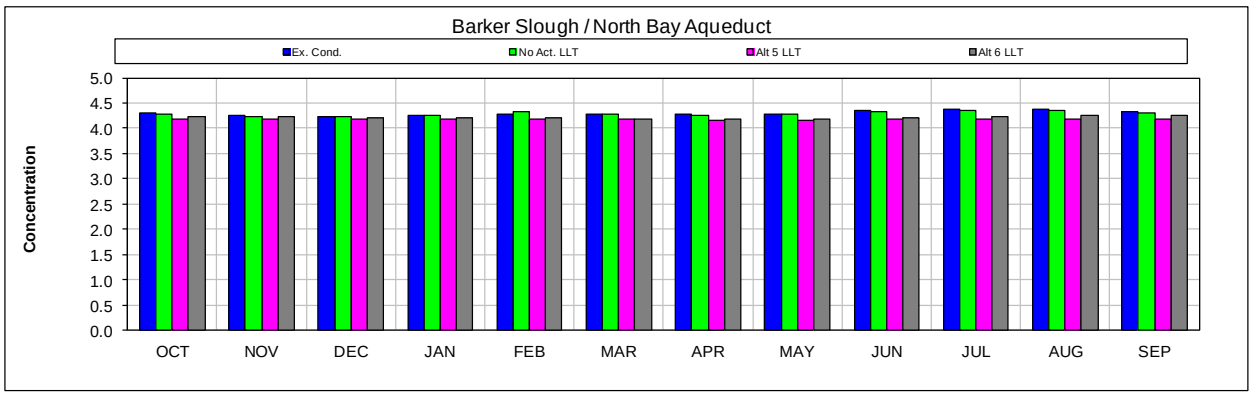
2


San Joaquin River at Antioch
Ex. Cond.
No Act. LLT
Alt 5 LLT
Alt 6 LLT
Concentration
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

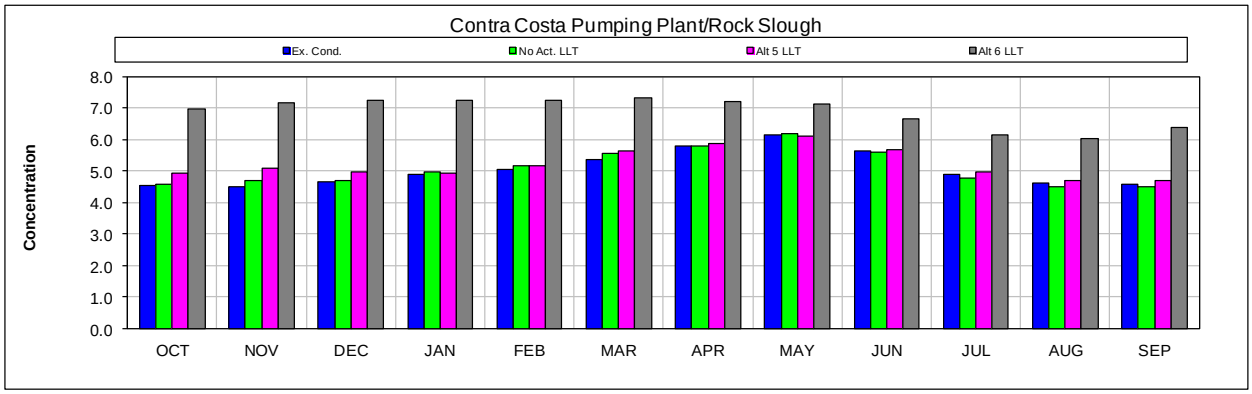
3


Sacramento River at Mallard Island (MAL)
Ex. Cond.
No Act. LLT
Alt 5 LLT
Alt 6 LLT
Concentration
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

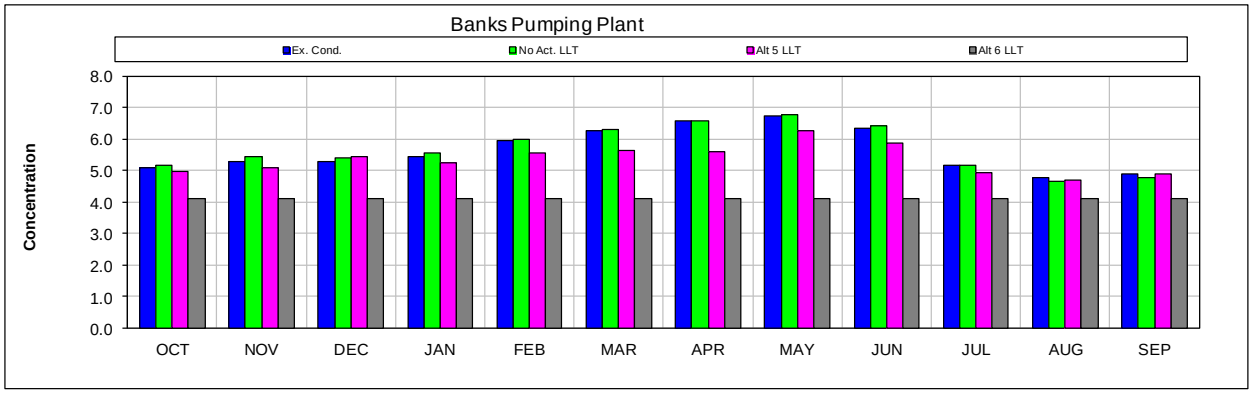
4


Barker Slough / North Bay Aqueduct
Ex. Cond.
No Act. LLT
Alt 5 LLT
Alt 6 LLT
Concentration
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

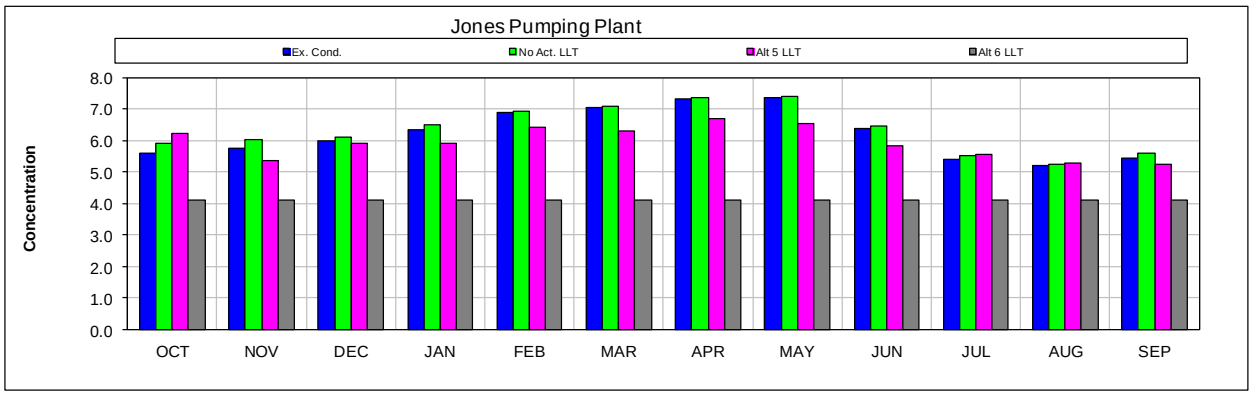
1


Contra Costa Pumping Plant/Rock Slough
Ex. Cond.
No Act. LLT
Alt 5 LLT
Alt 6 LLT
Concentration
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

2


Banks Pumping Plant
Ex. Cond.
No Act. LLT
Alt 5 LLT
Alt 6 LLT
Concentration
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

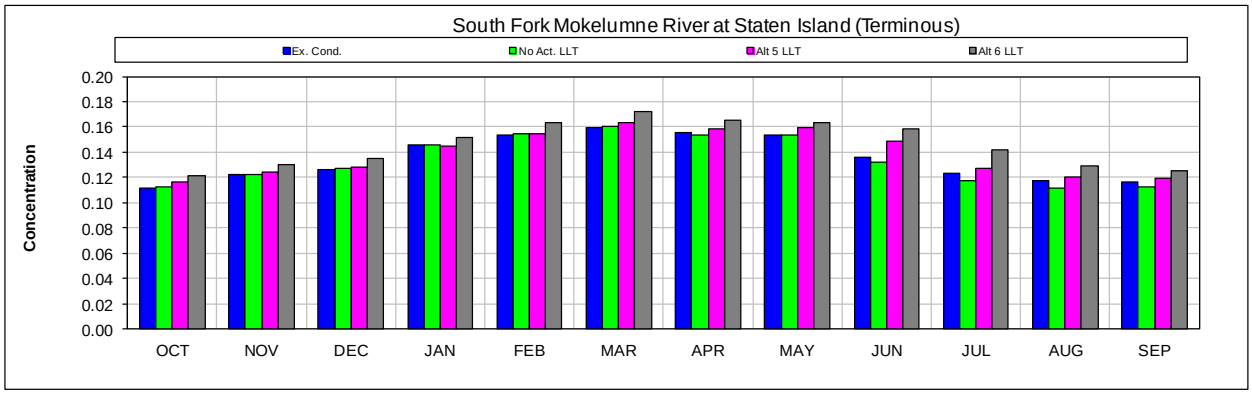
3

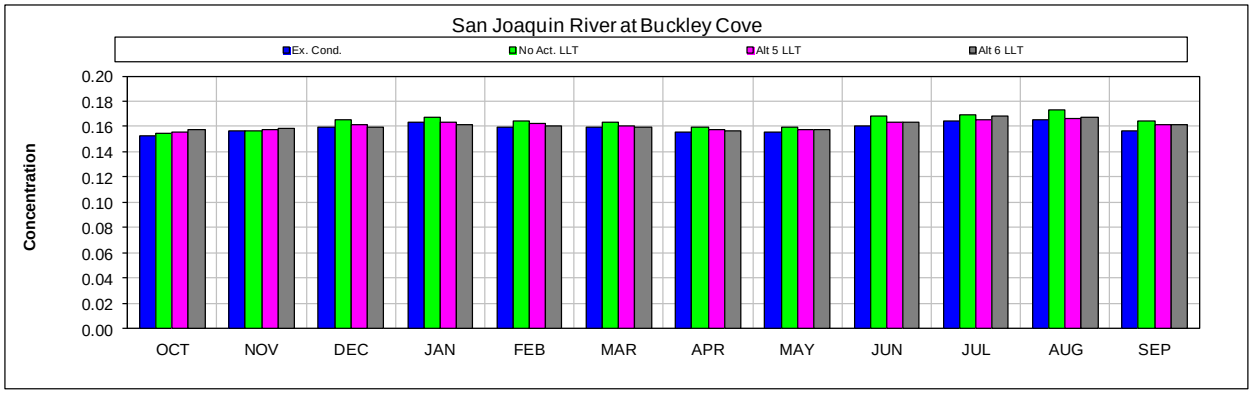

Jones Pumping Plant
Ex. Cond.
No Act. LLT
Alt 5 LLT
Alt 6 LLT
Concentration
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

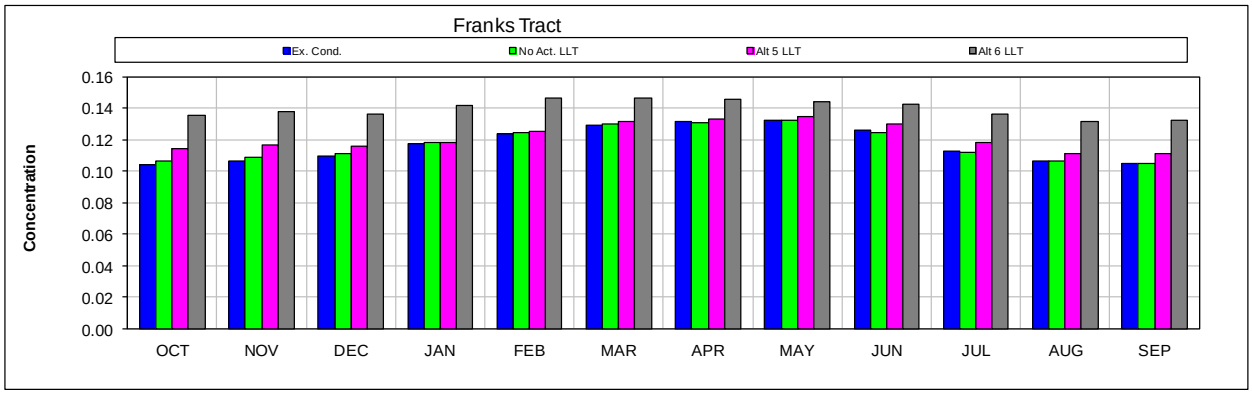
4

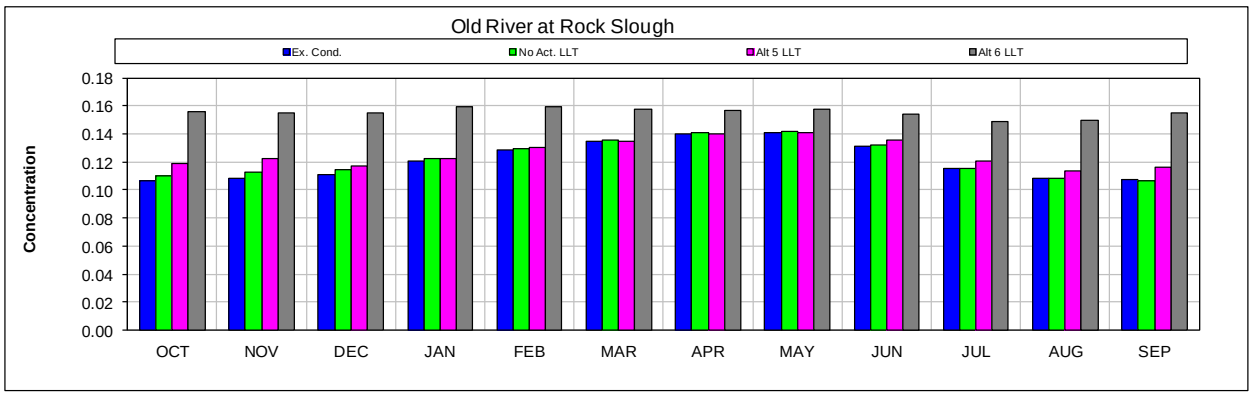
5

Figure I- 7. Modeled Monthly Concentrations of Methylmercury (ng/L) in Water for Existing Conditions, No Action Alternative Late Long Term, and Alternatives 5 and 6.

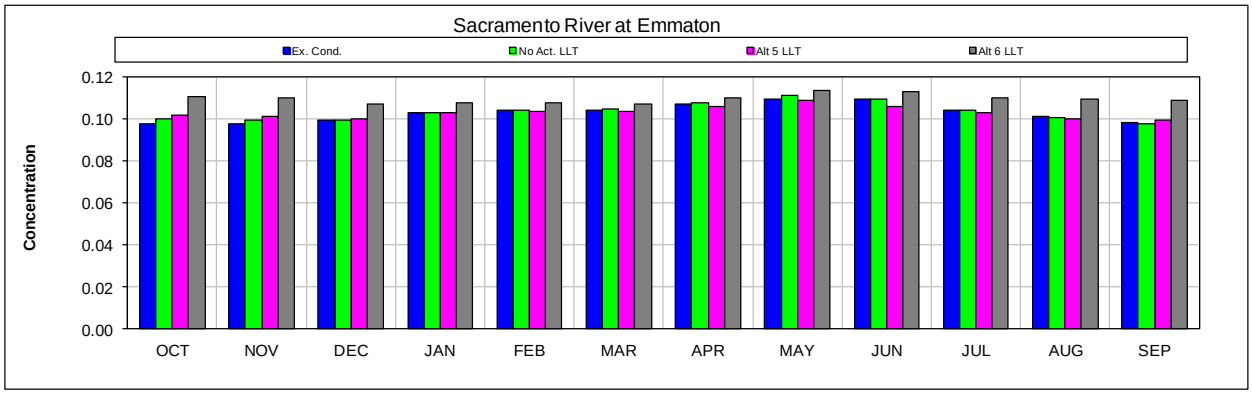




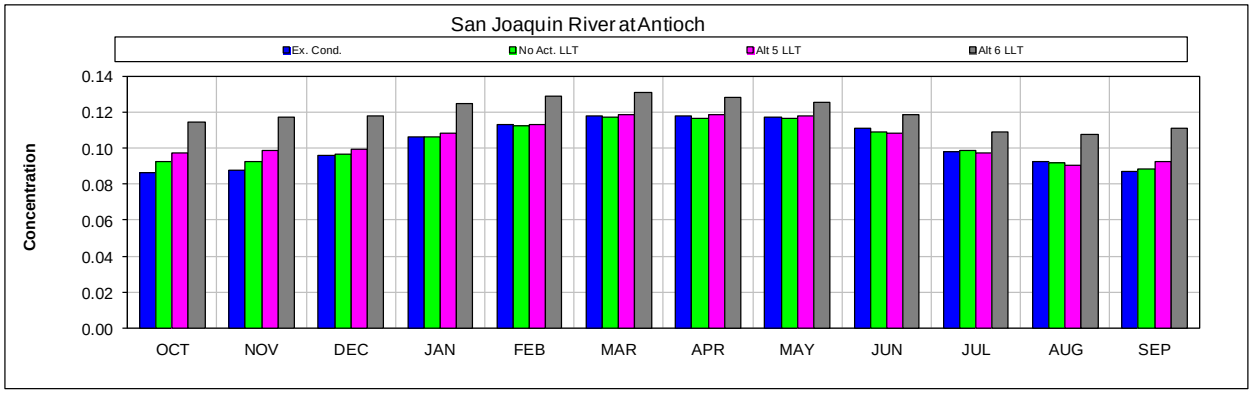



Old River at Rock Slough
Ex. Cond.
No Act. LLT
Alt 5 LLT
Alt 6 LLT
Concentration
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

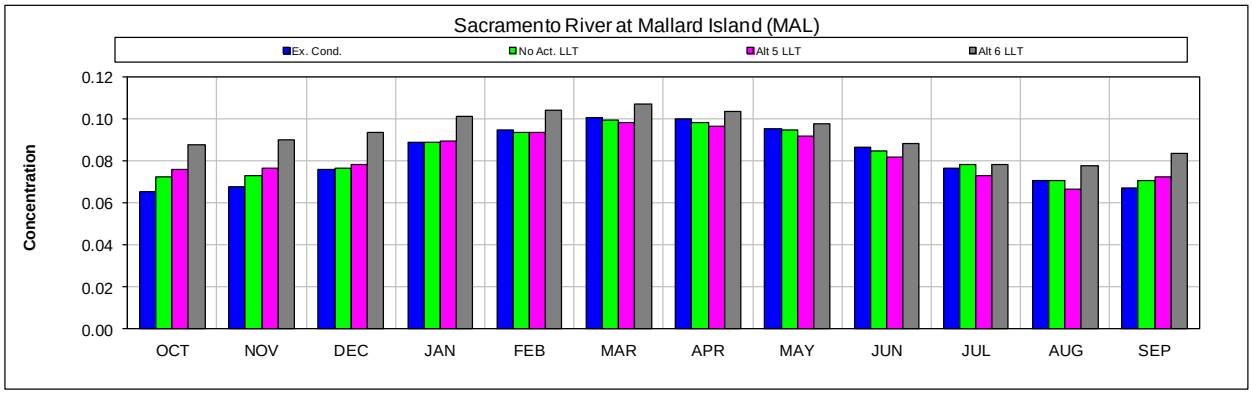
1


Sacramento River at Emmaton
Ex. Cond.
No Act. LLT
Alt 5 LLT
Alt 6 LLT
Concentration
0.12
0.10
0.08
0.06
0.04
0.02
0.00
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

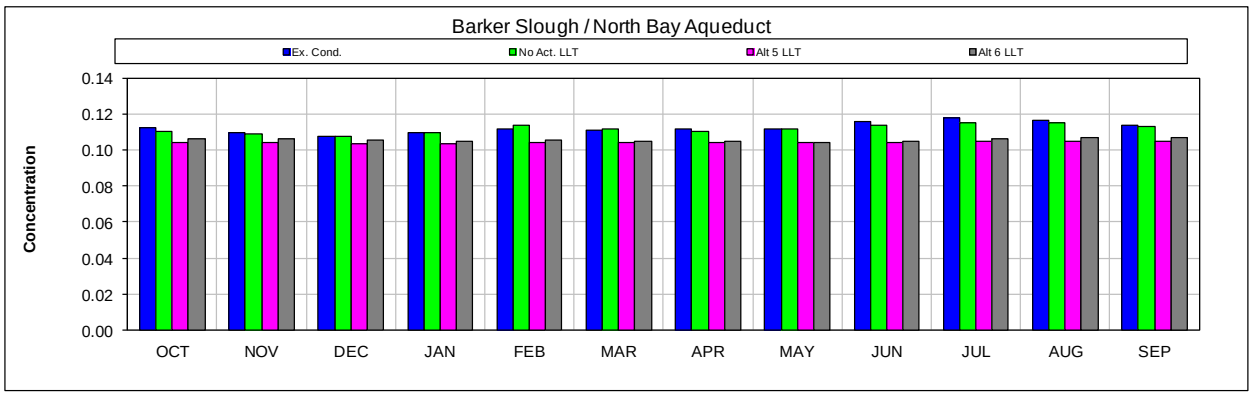
2


San Joaquin River at Antioch
Ex. Cond.
No Act. LLT
Alt 5 LLT
Alt 6 LLT
Concentration
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

3


Sacramento River at Mallard Island (MAL)
Ex. Cond.
No Act. LLT
Alt 5 LLT
Alt 6 LLT
Concentration
0.12
0.10
0.08
0.06
0.04
0.02
0.00
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

4


Barker Slough / North Bay Aqueduct
Ex. Cond.
No Act. LLT
Alt 5 LLT
Alt 6 LLT
Concentration
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
OCT
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DEC
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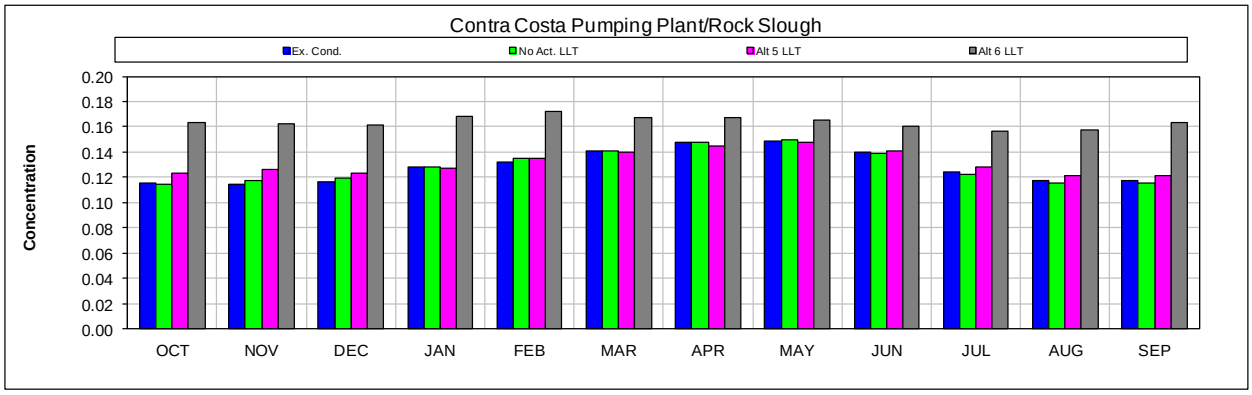
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

1


Contra Costa Pumping Plant/Rock Slough
Ex. Cond.
No Act. LLT
Alt 5 LLT
Alt 6 LLT
Concentration
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
OCT
NOV
DEC
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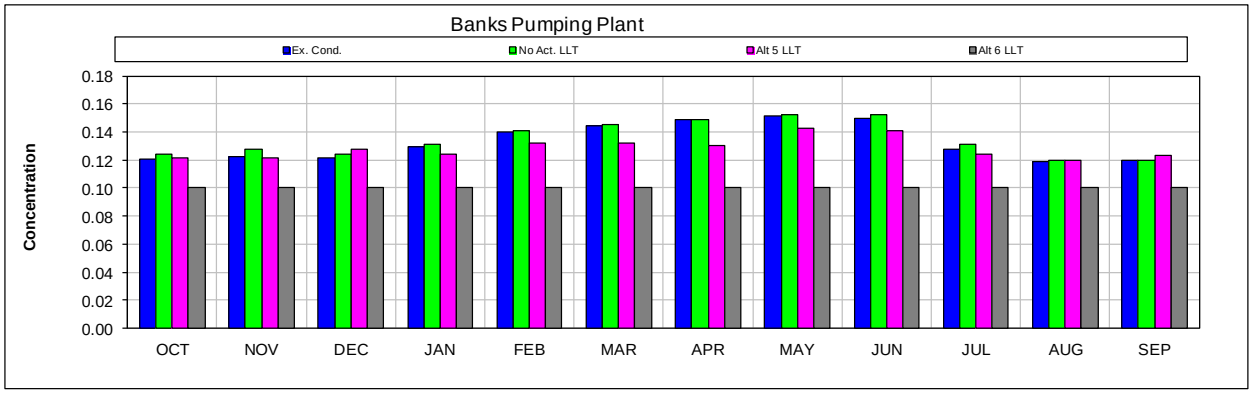
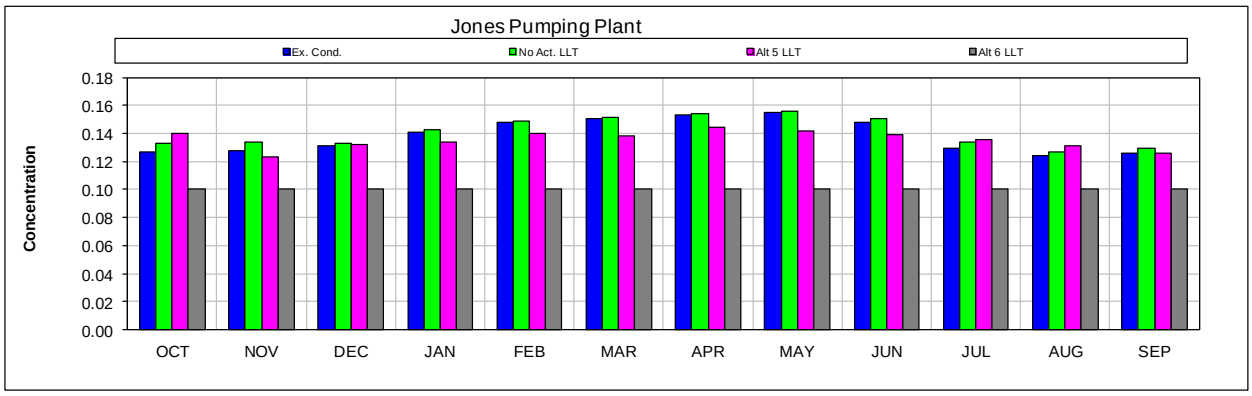
JUN
JUL
AUG
SEP

2


Banks Pumping Plant
Ex. Cond.
No Act. LLT
Alt 5 LLT
Alt 6 LLT
Concentration
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

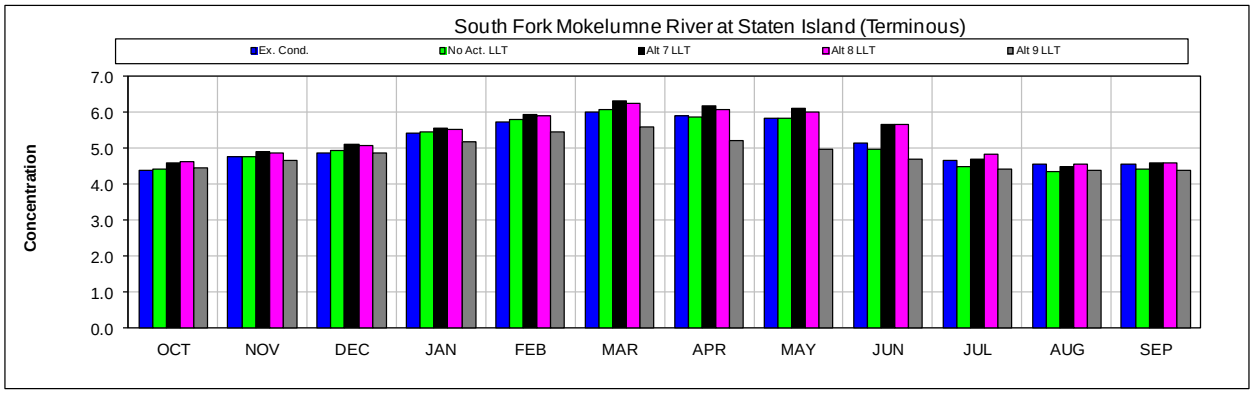
3

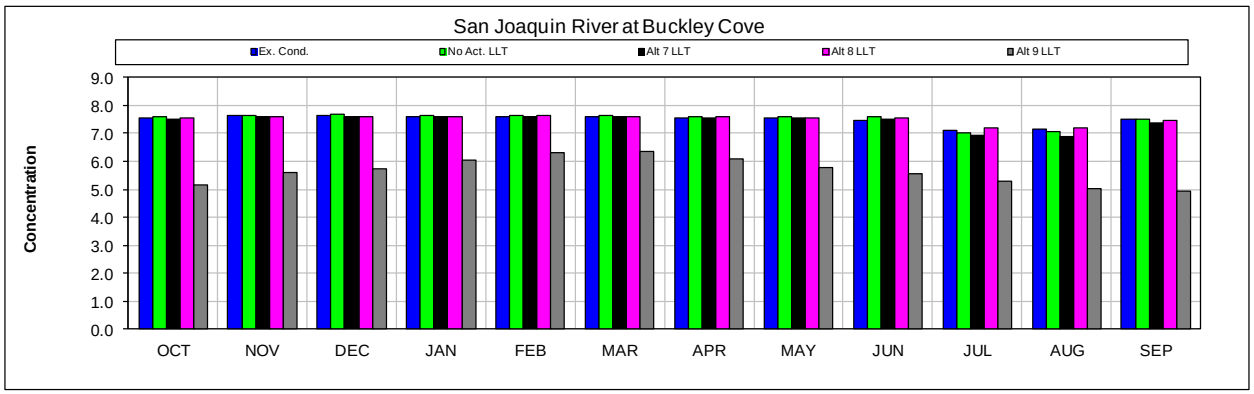

Jones Pumping Plant
Ex. Cond.
No Act. LLT
Alt 5 LLT
Alt 6 LLT
Concentration
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

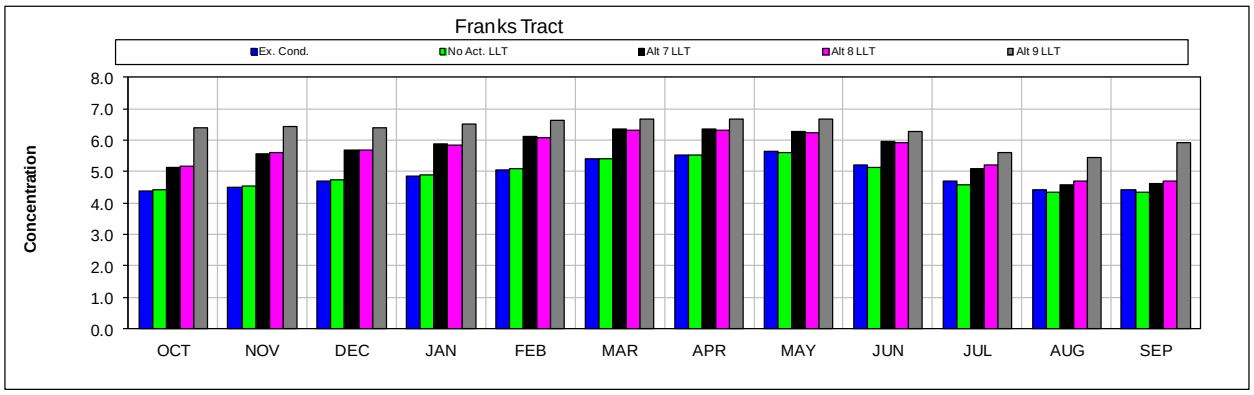
4

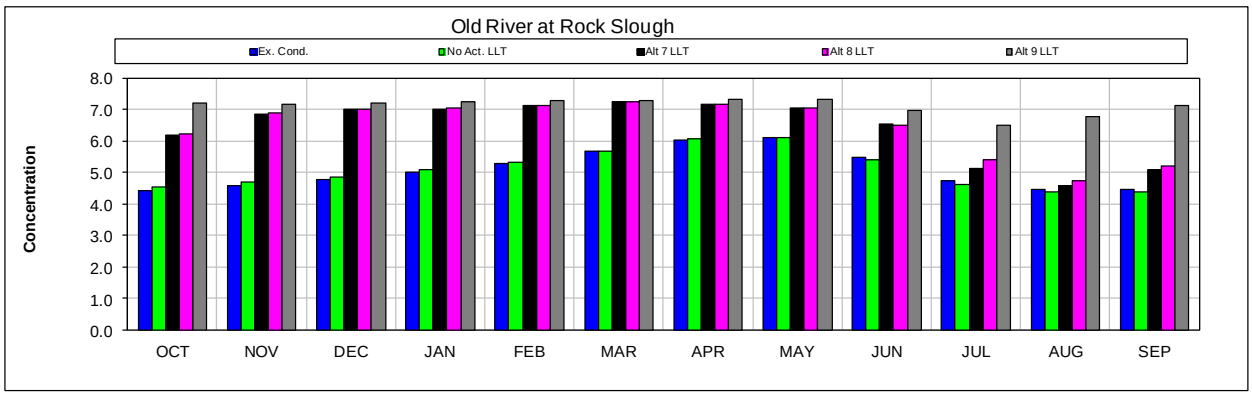
5

Figure I- 8. Modeled Monthly Concentrations of Mercury (ng/L) in Water for Existing Conditions, No Action Alternative Late Long Term, and Alternatives 7, 8, and 9.

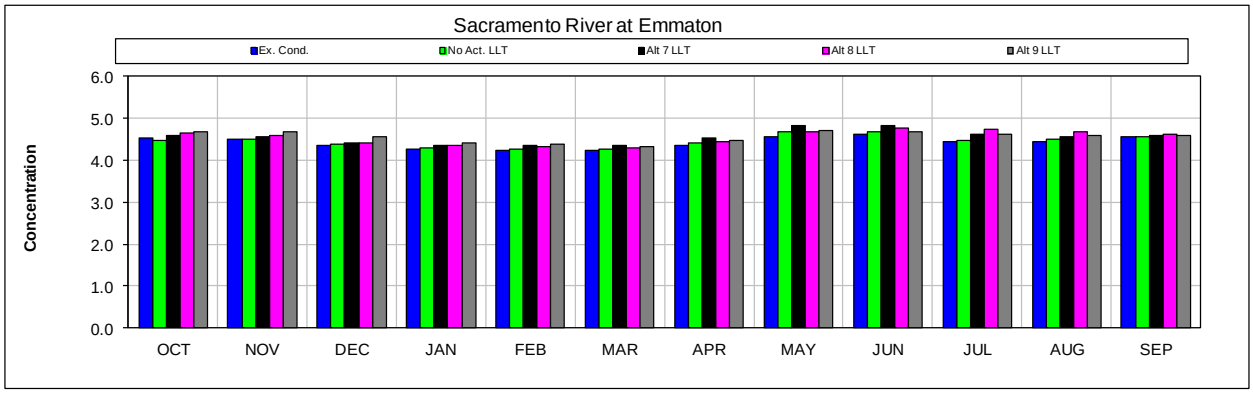




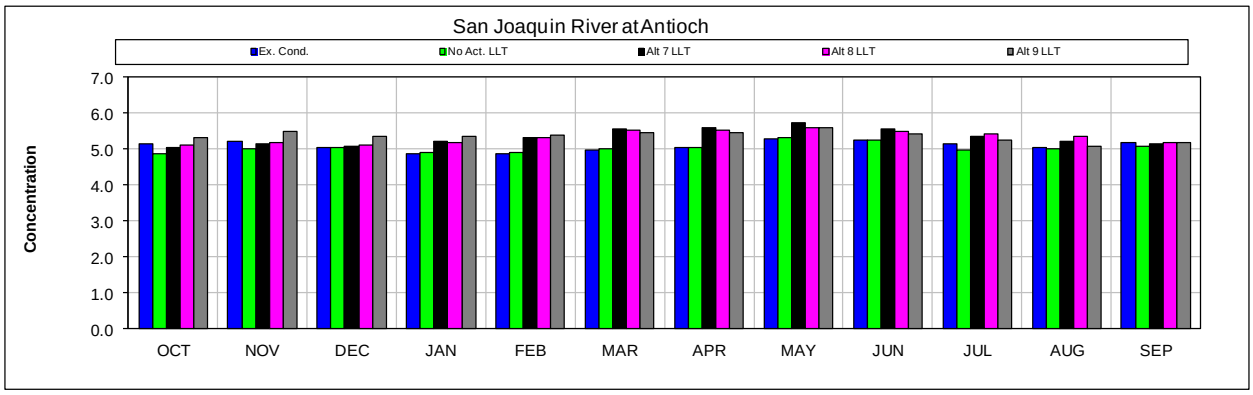



Old River at Rock Slough
Ex. Cond.
No Act. LLT
Alt 7 LLT
Alt 8 LLT
Alt 9 LLT
Concentration
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

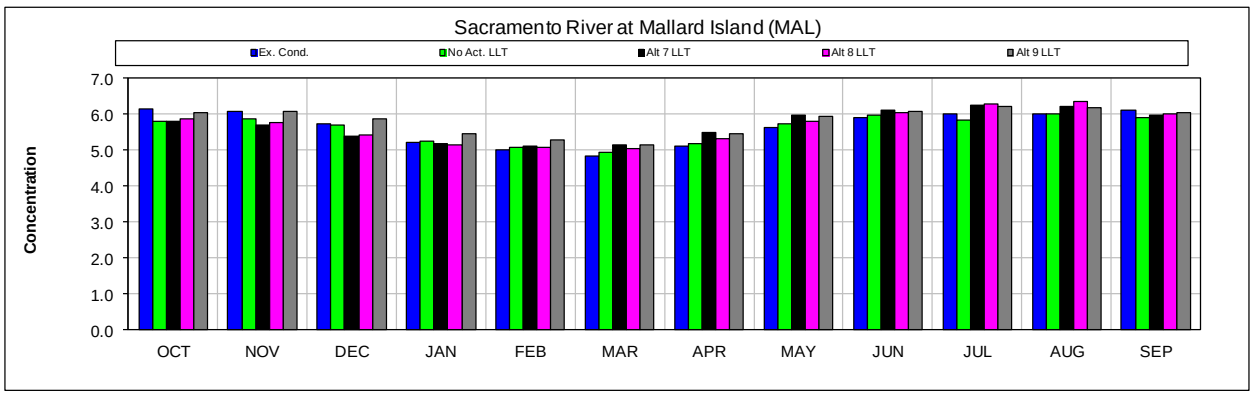
1


Sacramento River at Emmaton
Ex. Cond.
No Act. LLT
Alt 7 LLT
Alt 8 LLT
Alt 9 LLT
Concentration
6.0
5.0
4.0
3.0
2.0
1.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

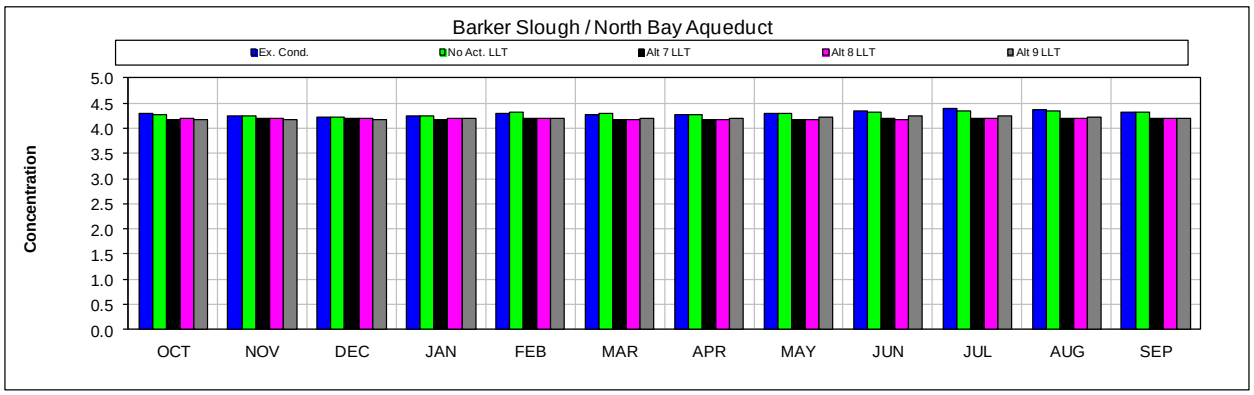
2


San Joaquin River at Antioch
Ex. Cond.
No Act. LLT
Alt 7 LLT
Alt 8 LLT
Alt 9 LLT
Concentration
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

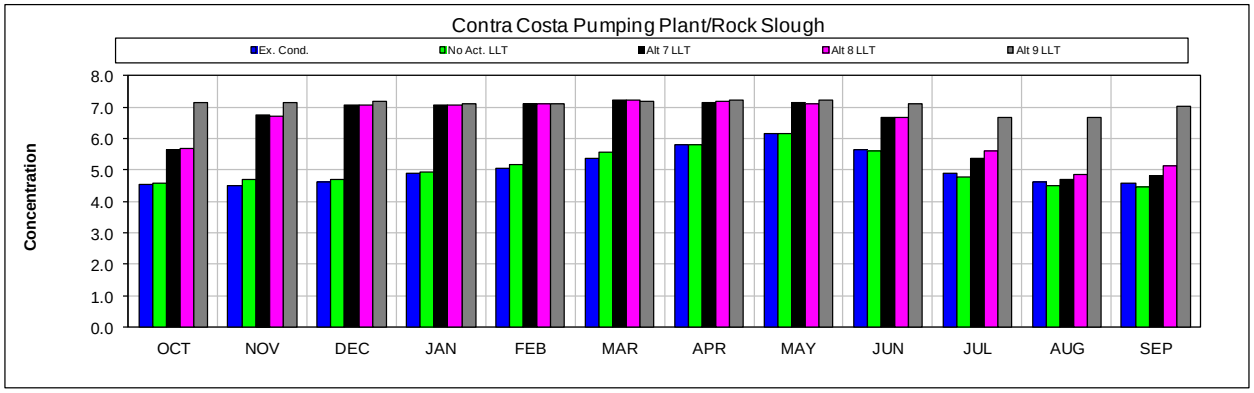
3


Sacramento River at Mallard Island (MAL)
Ex. Cond.
No Act. LLT
Alt 7 LLT
Alt 8 LLT
Alt 9 LLT
Concentration
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

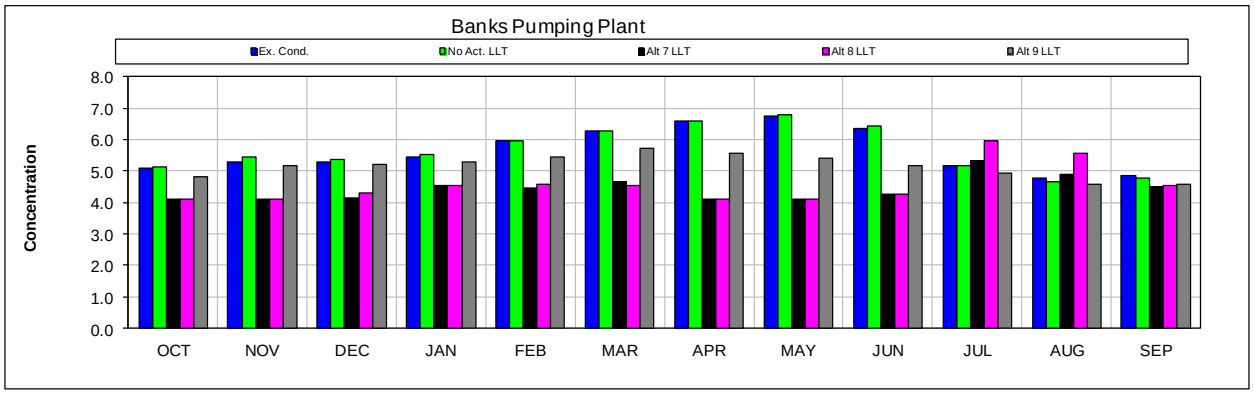
4


Barker Slough / North Bay Aqueduct
Ex. Cond.
No Act. LLT
Alt 7 LLT
Alt 8 LLT
Alt 9 LLT
Concentration
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

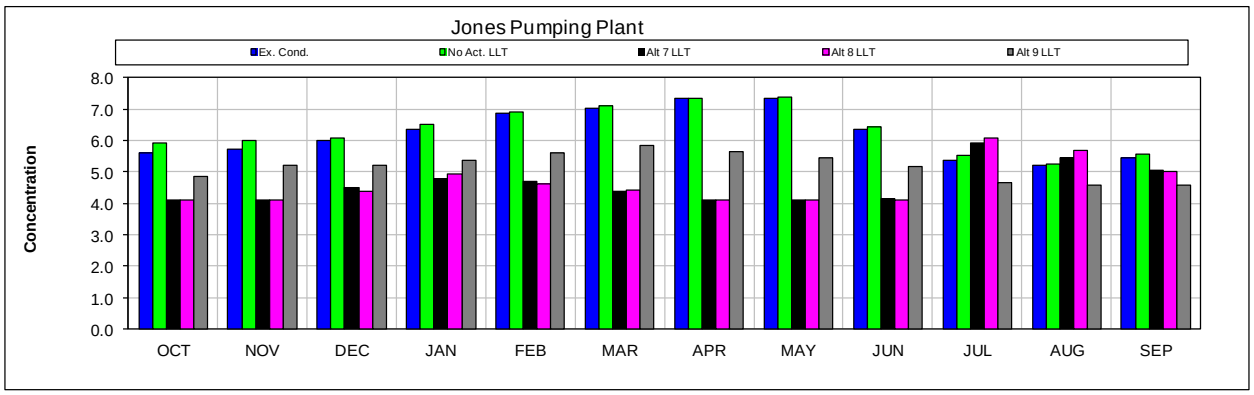
1


Contra Costa Pumping Plant/Rock Slough
Ex. Cond.
No Act. LLT
Alt 7 LLT
Alt 8 LLT
Alt 9 LLT
Concentration
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

2


Banks Pumping Plant
Ex. Cond.
No Act. LLT
Alt 7 LLT
Alt 8 LLT
Alt 9 LLT
Concentration
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

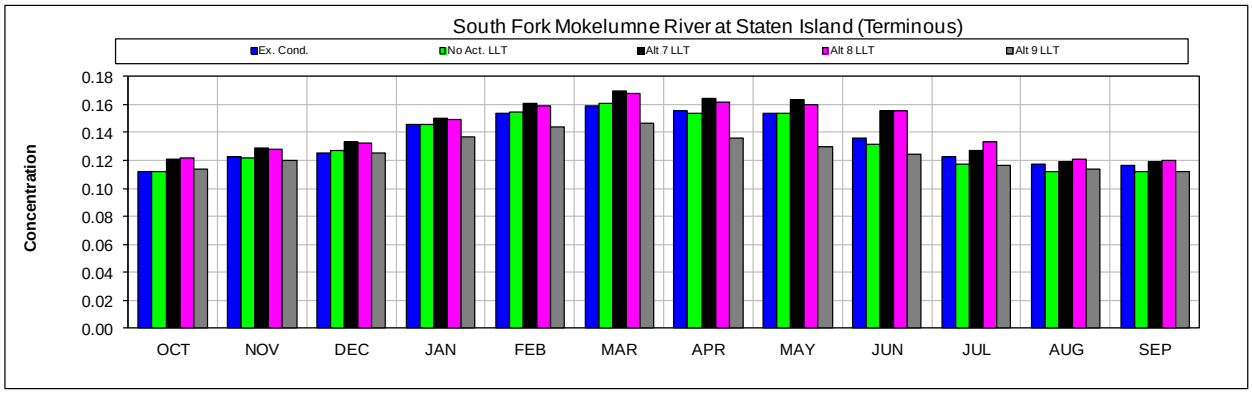
3

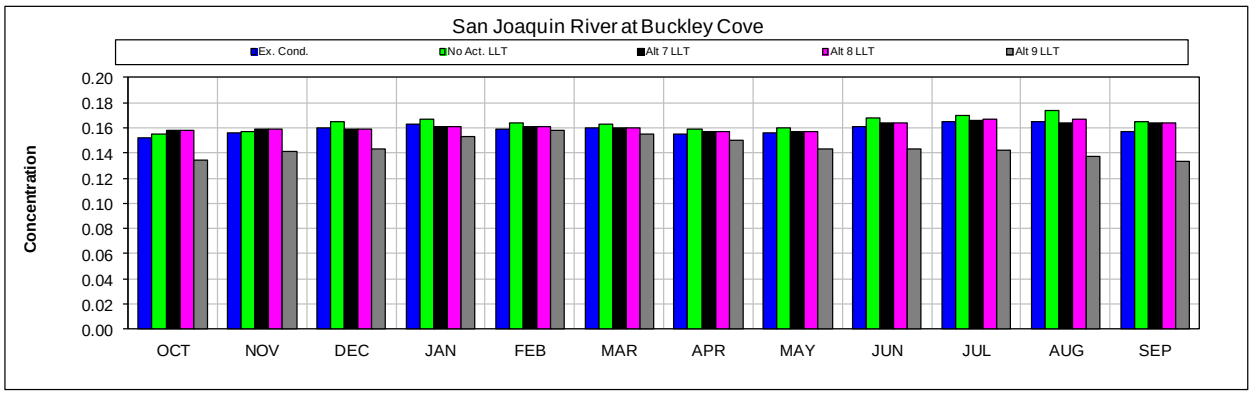

Jones Pumping Plant
Ex. Cond.
No Act. LLT
Alt 7 LLT
Alt 8 LLT
Alt 9 LLT
Concentration
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP

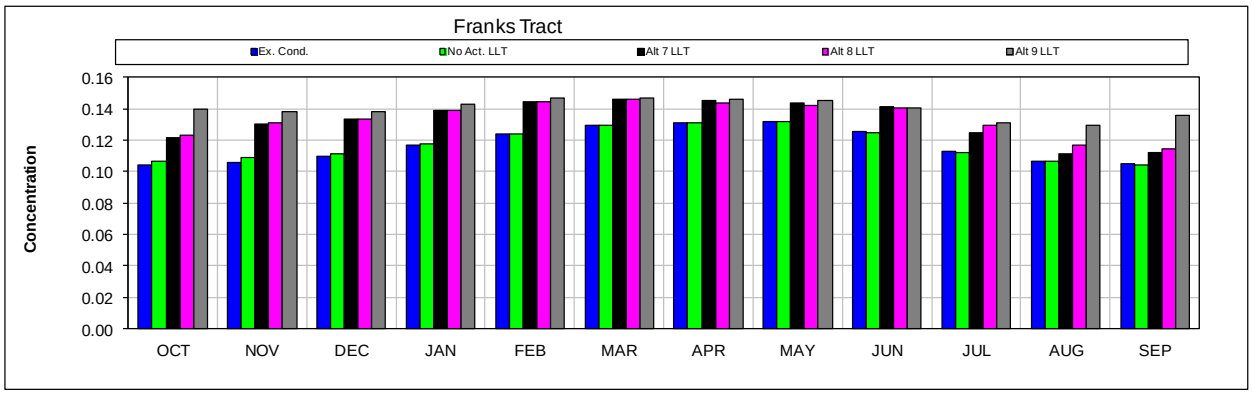
4

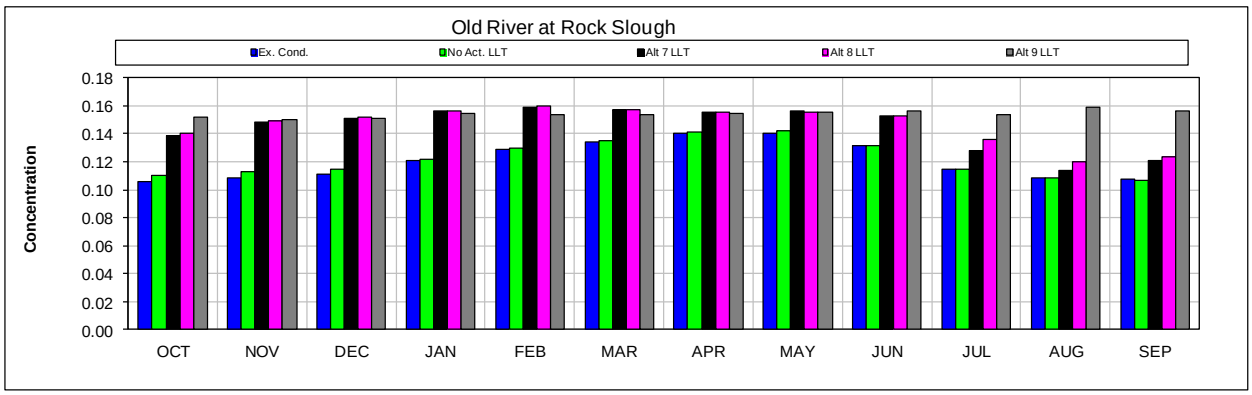
5

Figure I- 9. Modeled Monthly Concentrations of Methylmercury (ng/L) in Water for Existing Conditions, No Action Alternative Late Long Term, and Alternatives 7, 8, and 9.








Old River at Rock Slough
Ex. Cond.
No Act. LLT
Alt 7 LLT
Alt 8 LLT
Alt 9 LLT
Concentration
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
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JUN
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AUG
SEP

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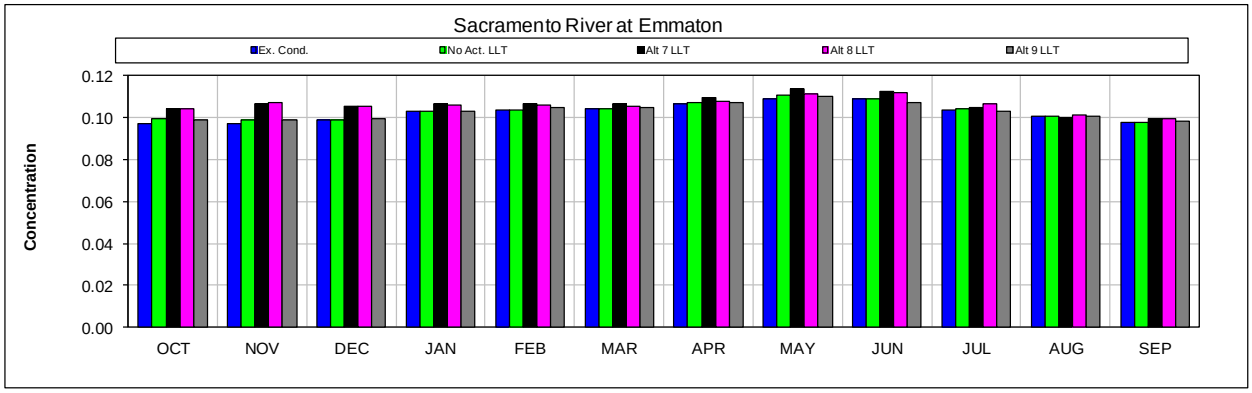
Sacramento River at Emmaton
Ex. Cond.
No Act. LLT
Alt 7 LLT
Alt 8 LLT
Alt 9 LLT
Concentration
0.12
0.10
0.08
0.06
0.04
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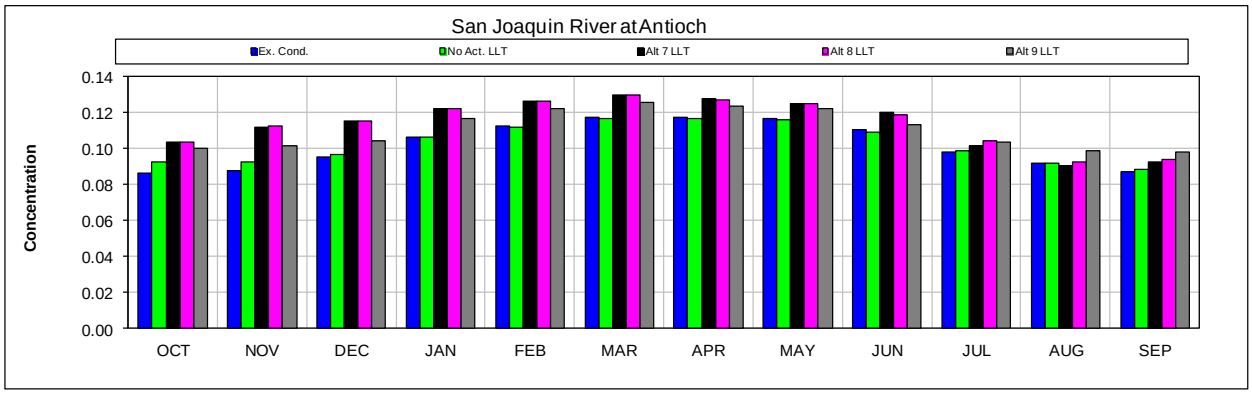
San Joaquin River at Antioch
Ex. Cond.
No Act. LLT
Alt 7 LLT
Alt 8 LLT
Alt 9 LLT
Concentration
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0.12
0.10
0.08
0.06
0.04
0.02
0.00
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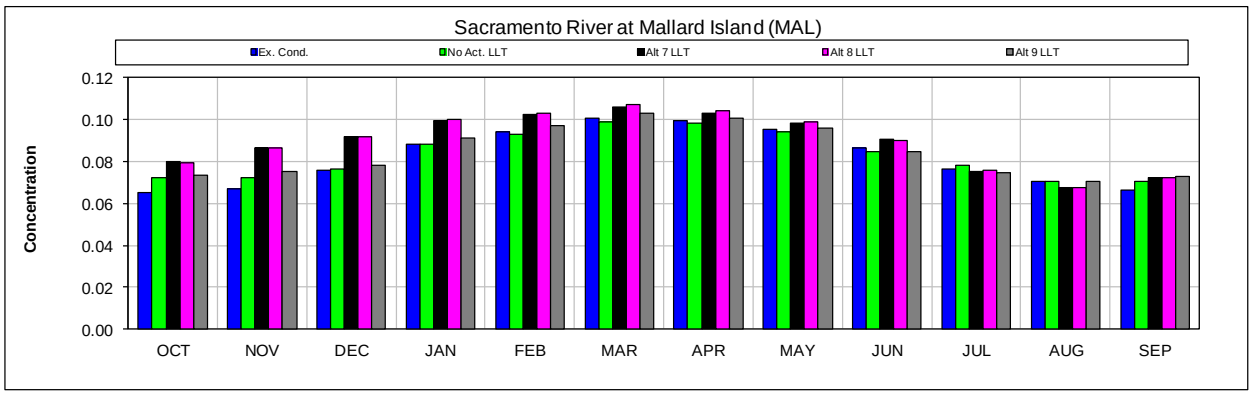
3


Sacramento River at Mallard Island (MAL)
Ex. Cond.
No Act. LLT
Alt 7 LLT
Alt 8 LLT
Alt 9 LLT
Concentration
0.12
0.10
0.08
0.06
0.04
0.02
0.00
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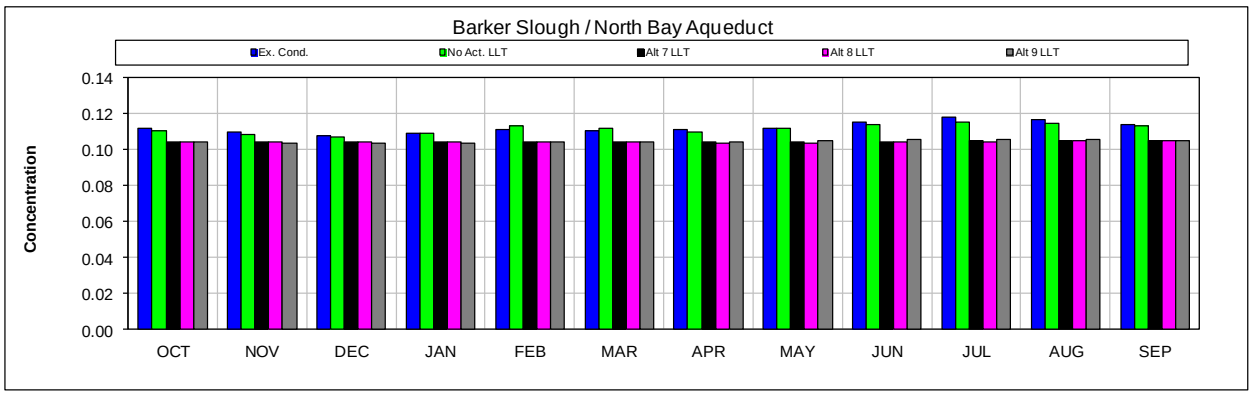
4


Barker Slough / North Bay Aqueduct
Ex. Cond.
No Act. LLT
Alt 7 LLT
Alt 8 LLT
Alt 9 LLT
Concentration
0.14
0.12
0.10
0.08
0.06
0.04
0.02
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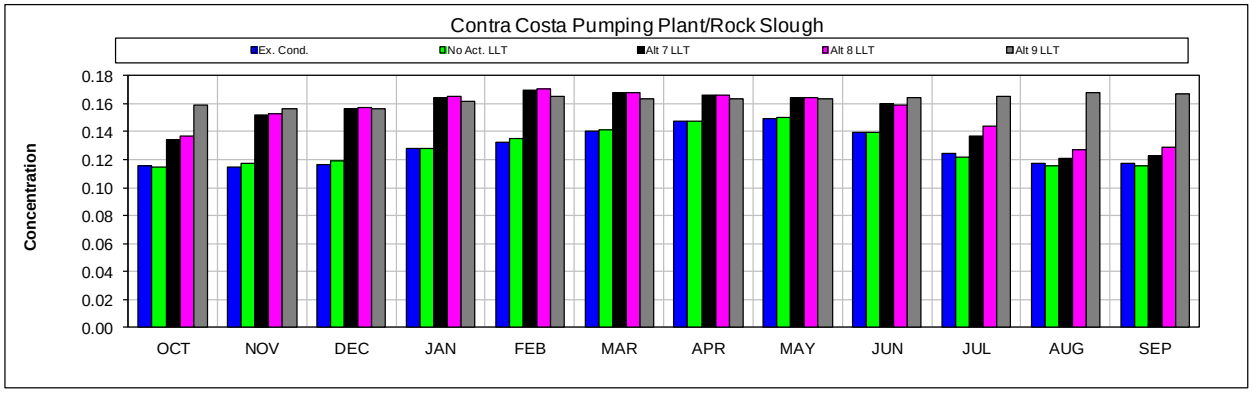
Contra Costa Pumping Plant/Rock Slough
Ex. Cond.
No Act. LLT
Alt 7 LLT
Alt 8 LLT
Alt 9 LLT
Concentration
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
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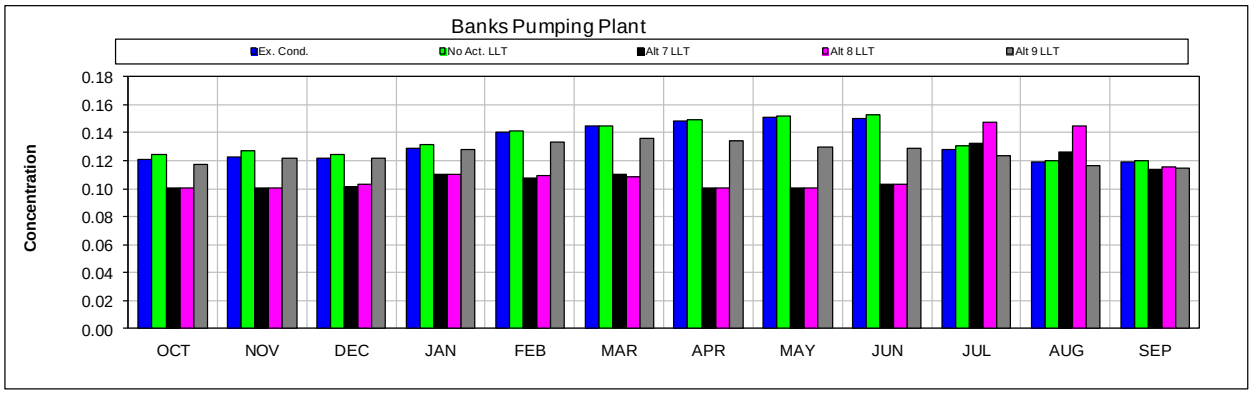
Banks Pumping Plant
Ex. Cond.
No Act. LLT
Alt 7 LLT
Alt 8 LLT
Alt 9 LLT
Concentration
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
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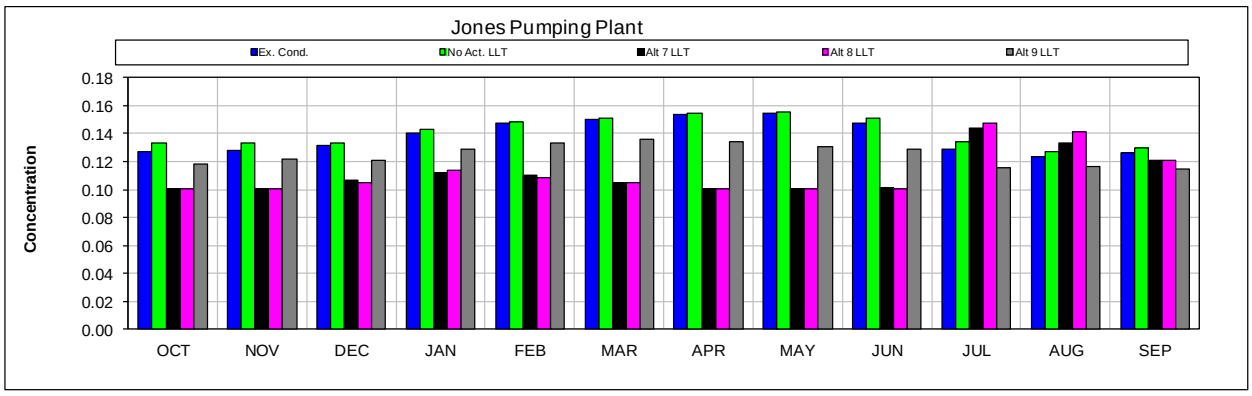
Jones Pumping Plant
Ex. Cond.
No Act. LLT
Alt 7 LLT
Alt 8 LLT
Alt 9 LLT
Concentration
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
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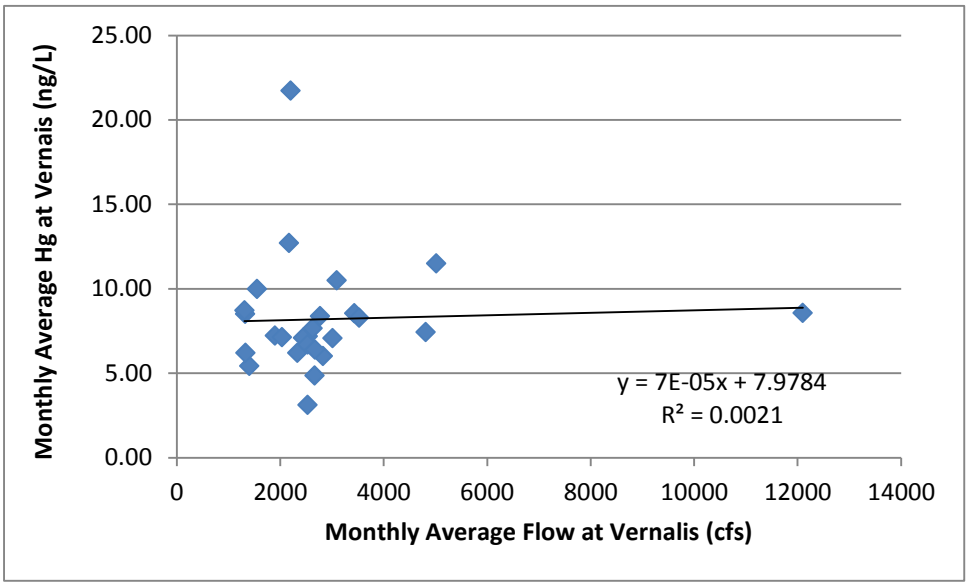

Figure I- 10. Monthly Average of Mercury Concentrations in Surface Water (ng/L) vs. Flow (cubic feet/second) at Vernalis.

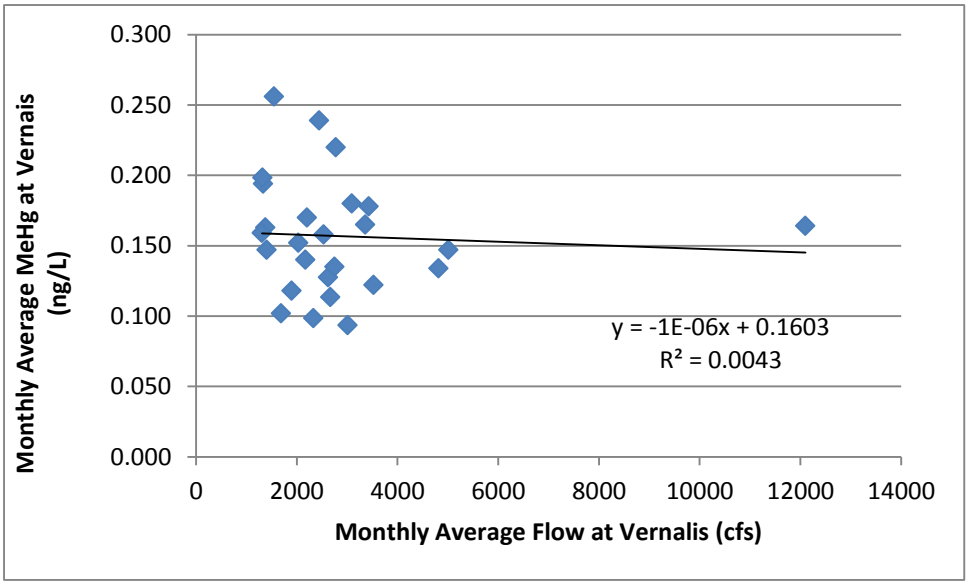

Figure I- 11. Monthly Average of Methylmercury Concentration in Surface Water (ng/L) vs. Flow (cubic feet/second) at Vernalis.

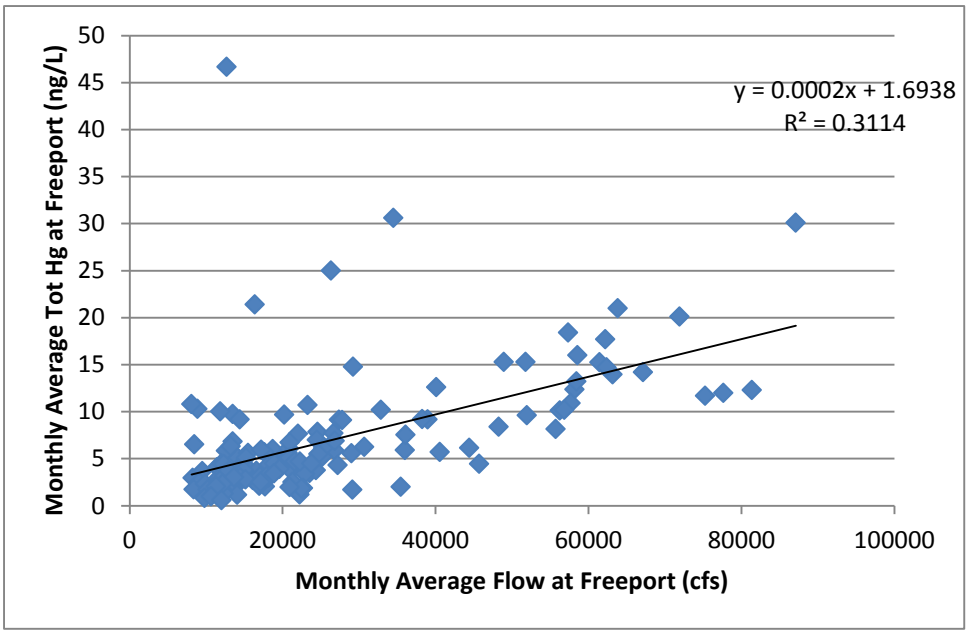

Figure I- 12. Monthly Average of Mercury Concentrations in Surface Water (ng/L) vs. Flow (cubic feet/second) at Freeport.

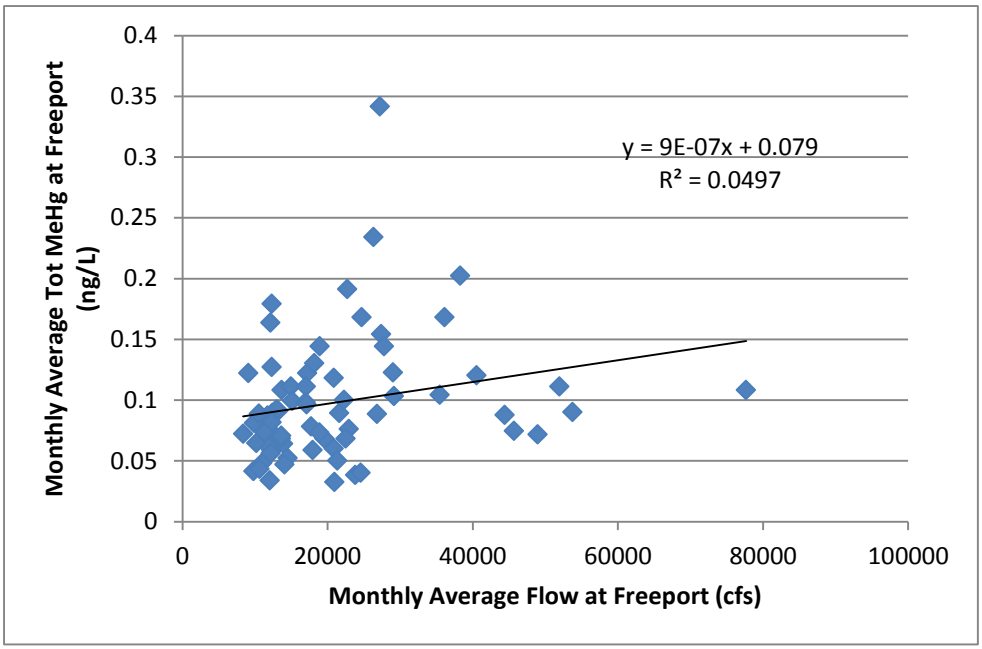

Figure I- 13. Monthly Average of Methylmercury Concentration in Surface Water (ng/L) vs. Flow (cubic feet/second) at Freeport.