Delta Smelt Working Group Meeting Notes

July 9, 2007

Participating: Julio Adib-Samii (CDFG), Gonzalo Castillo (USFWS), Mike Chotkowski (USBR), Fred Feyrer (CDWR), Lenny Grimaldo (CDWR), Tracy Hinojosa (CDWR), Ann Lubas-Williams (USBR), Ted Sommer (CDWR), Jim White (CDFG), and Peter Johnsen (USFWS, convener and scribe)

For Discussion:
1. Update on current conditions, survey data, and salvage
2. Particle Tracking Modeling runs
3. Evaluate the need for moderation of Old River and Middle River flows

Recommendation for WOMT: After reviewing all available information on delta smelt salvage, surveys, Delta conditions and particle tracking modeling, the Working Group concluded that the risk of entrainment had abated. The Working Group therefore rescinds the recommendation to moderate Project operations to achieve a net upstream flow in Old and Middle River no greater than 5000 cfs. The group will continue to evaluate new information as it becomes available to decide if it would be necessary to recommend any new protective actions in the future.

1. The Department of Fish and Game (DFG) had sorted some of the samples from the ninth 20-mm survey conducted from 7/2/07 to 7/7/07. At the time of the meeting, a total of 17 delta smelt were collected ranging in length from 23 to 56mm[1]. The length of the 10 fish from station 706 (South end of Decker Island) ranged from 23 to 56mm. The remaining 7 fish were sampled at station 513 at the Sacramento River/San Joaquin River confluence. These fish ranged in length from 32 to about 46 mm. The 20-mm trawl sampled delta smelt in locations similar to the last Summer Tow-net Survey (6/25/07 to 6/29/07) indicating that the majority of delta smelt are located in the lower Sacramento River and at the Sacramento River's confluence with the San Joaquin River (confluence). DFG staff has posted the results from 20-mm and STN sampling to the web (http://www.delta.dfg.ca.gov/data/skt/).

Delta water temperatures averaged for the three stations used to monitor water temperatures reached 25.1 degrees on July 5 and 6, but then decreased to 24.9 on July 7 and to 24.8 on July 8. Exports at SWP increased from 5,025 cfs on July 7 to about 5,700 cfs on July 8. CVP exports are approximately 4,500 cfs. Old River/Middle River combined flows stayed at about 9,000 cfs upstream flow from the beginning of July until July 6 when it increased to about 10,000 cfs upstream flow.

Salvage has decreased since July 2. Recent smelt salvage at the SWP was 13, 18, 21, 9, 12, and 6 for the period July 3 through July 8 (Table 1). Delta smelt was not salvaged at the federal facility.

[1] As of 07/11/07, DFG had sorted most of the samples. A total of 37 delta smelt were collected during survey 9 ranging in length from 23 to 56mm. Delta smelt were collected at stations 508 and 513 at the confluence; 703 in Sherman Lake; and 706 and 707 in the Sacramento River (http://www.delta.dfg.ca.gov/data/20mm/CPUE_map3.asp).

Table 1. Daily salvage at the two water export facilities, density of delta smelt relative to daily export volumes, and Old River/Middle River (OMR) combined flows.

Date	SWP Salvage	SWP Salvage Density	CVP Salvage	CVP Salvage Density	Combined Salvage	Cumulative Salvage	OMR
6/21/07	30	16.234	0	0	30	1046	-1895
6/22/07	57	30.778	0	0	57	1103	-3360
6/23/07	15	8.004	0	0	15	1118	-4750
6/24/07	24	20.618	0	0	24	1142	-4750
6/25/07	0	0	0	0	0	1142	-4940
6/26/07	30	46.728	0	0	30	1172	-5330
6/27/07	327	194.527	0	0	327	1499	-5270
6/28/07	30	17.678	0	0	30	1529	-5280
6/29/07	78	44.776	0	0	78	1607	-5130
6/30/07	390	144.551	0	0	390	1997	-5860
7/1/07	246	23.395	12	1.541	258	2255	-8370
7/2/07	311	25.993	0	0	311	2566	-9670
7/3/07	10	0.919	0	0	10	2576	-9450
7/4/07	18	1.556	0	0	18	2594	-9170
7/5/07	21	1.997	0	0	21	2615	-9480
7/6/07	9	0.788	0	0	9	2624	-10080
7/7/07	12	1.088	0	0	12	2636	

2. The Working Group reviewed the requested Particle Tracking Modeling (PTM) runs provided by DWR. The Working Group had requested that DWR perform PTM runs for the purposes of estimating the footprint of entrainment and gauging the level of exports that would fail to entrain delta smelt at or near the confluence (see notes for July 2, 2007). Two scenarios were presented:

Scenario A: Combined exports were kept at 5,500 cfs throughout the forecast period, Sacramento River flows were assumed to be about 12,500 cfs, and San Joaquin River flows were assumed to be about 1,000 cfs.

Scenario B: SWP exports increased to 7,180 cfs (combined 11,580) beginning July 1, Sacramento River flows were assumed to be about 19,300, and San Joaquin River flows were assumed to be about 1,000 cfs.

Scenario B approximately represents the current conditions. Particles were injected at 10 stations throughout the Delta, and the PTM ran for 45 days.

The highest entrainment of injected particles occurred for particles injected in the San Joaquin River upstream of Franks Tract, *i.e.*, stations 906 and 910 (Table 2, attachment). Entrainment at the two stations was somewhat similar in the two scenarios (Table 2, attachment). The largest increase in entrainment between the two PTM runs was seen in particles injected in San Joaquin River by Franks Tract, *i.e.*, station 812, where entrainment of particles increased from 41 percent in Scenario A to 65 percent in scenario B. One of the largest differences in entrainment was seen for particles injected in San Joaquin River just upstream of the confluence, *i.e.*, station 804, where entrainment increased from 0.8 percent in Scenario A to 7.5 percent in Scenario B.

Particle entrainment was low at the stations where the majority of delta smelt are believed to be located. These include station 704 in the Sacramento River, Station 804 in San Joaquin River just upstream of the confluence, and station 513 at the confluence of the two rivers.

Table 2. Percent entrainment of particles at CVP and SWP 45 days after injection.

Station	Scenario A	Scenario B	Difference	% Difference
910	78.1	83.2	5.1	6.1
906	83.7	89.9	6.2	6.9
815	58.2	76.3	18.1	23.7
902	71.7	75.6	3.9	5.2
812	40.9	65	24.1	37.1
804	0.8	7.5	6.7	89.3
711	11.1	25.1	14	55.8
704	2.2	6.6	4.4	66.7
809	8.2	26.1	17.9	68.6
513	0.1	1.7	1.6	94.1

3. The working group evaluated all the available information and agreed that maintaining Old River/Middle River flow at no more than 5,000 cfs would not provide any significant protection for delta smelt at this time. The group based this conclusion on the assumed distribution of delta smelt in the Sacramento River and near the confluence, and the estimated low entrainment of particles injected at those locations. Given the current export rates and inflow, the working group therefore believes that the majority of delta smelt are not vulnerable to entrainment. Salvage at the water export facilities has stayed low, with no salvage at CVP and low numbers of smelt salvaged at SWP over the last six days despite a considerable increase in export rates. This supports the conclusion that few, if any, delta smelt are currently in Old River or being drawn into the Old River. Further, temperatures around 25º C are expected to increase stress on the delta smelt resulting in any remaining delta smelt either moving out of the south delta or succumbing. However, the group noted that exports at the State facility are not at full capacity, and any increase in water exports could result in increased entrainment. The group will therefore continue to monitor the Delta's physical conditions, water exports, distribution of delta smelt, and salvage to evaluate the need for any future protective action.

Next meeting: No date is set for the next meeting. The Working Group members will continue to monitor surveys, conditions in the Delta, and salvage. If a concern is identified, the group will immediately set a date for a new meeting.

Submitted,

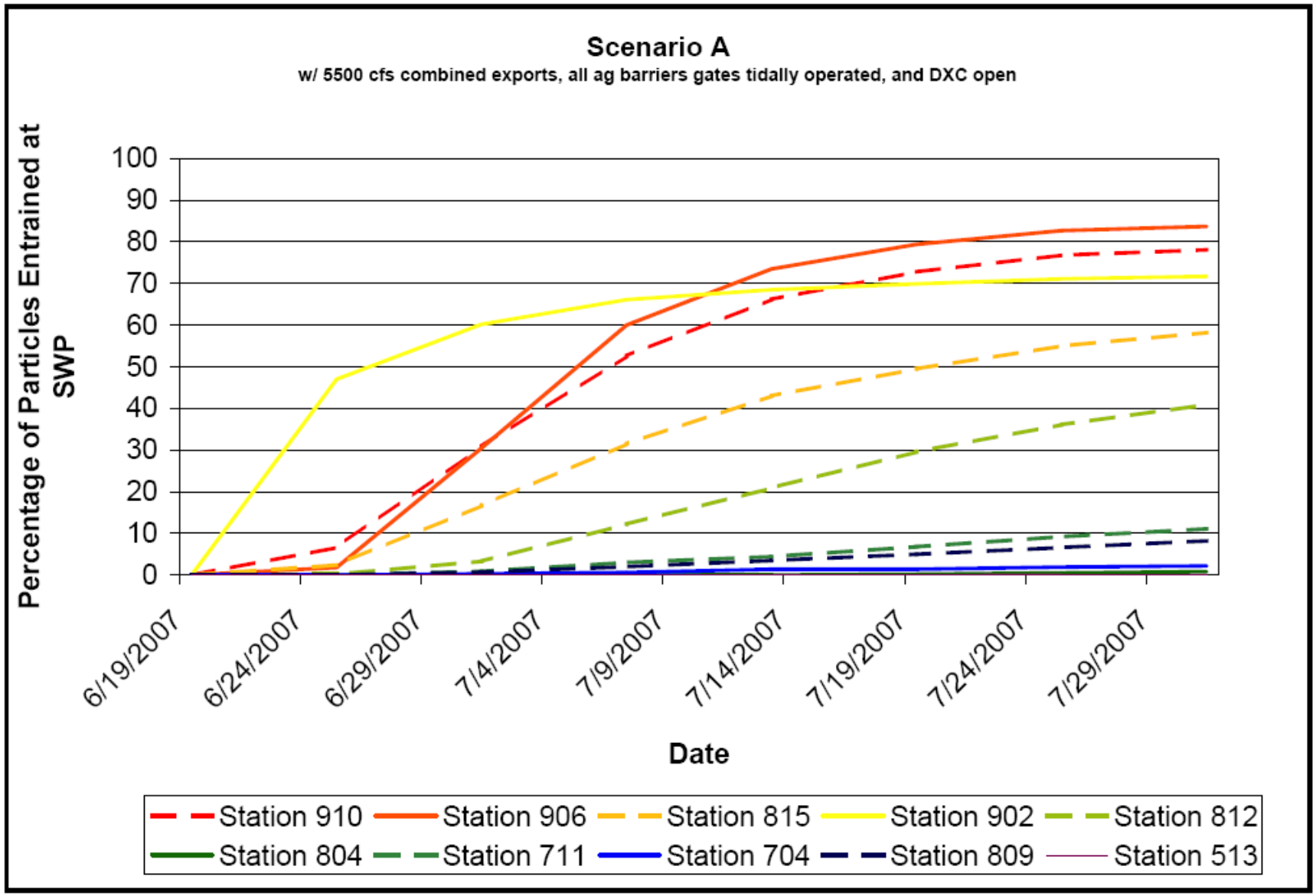
PBJ

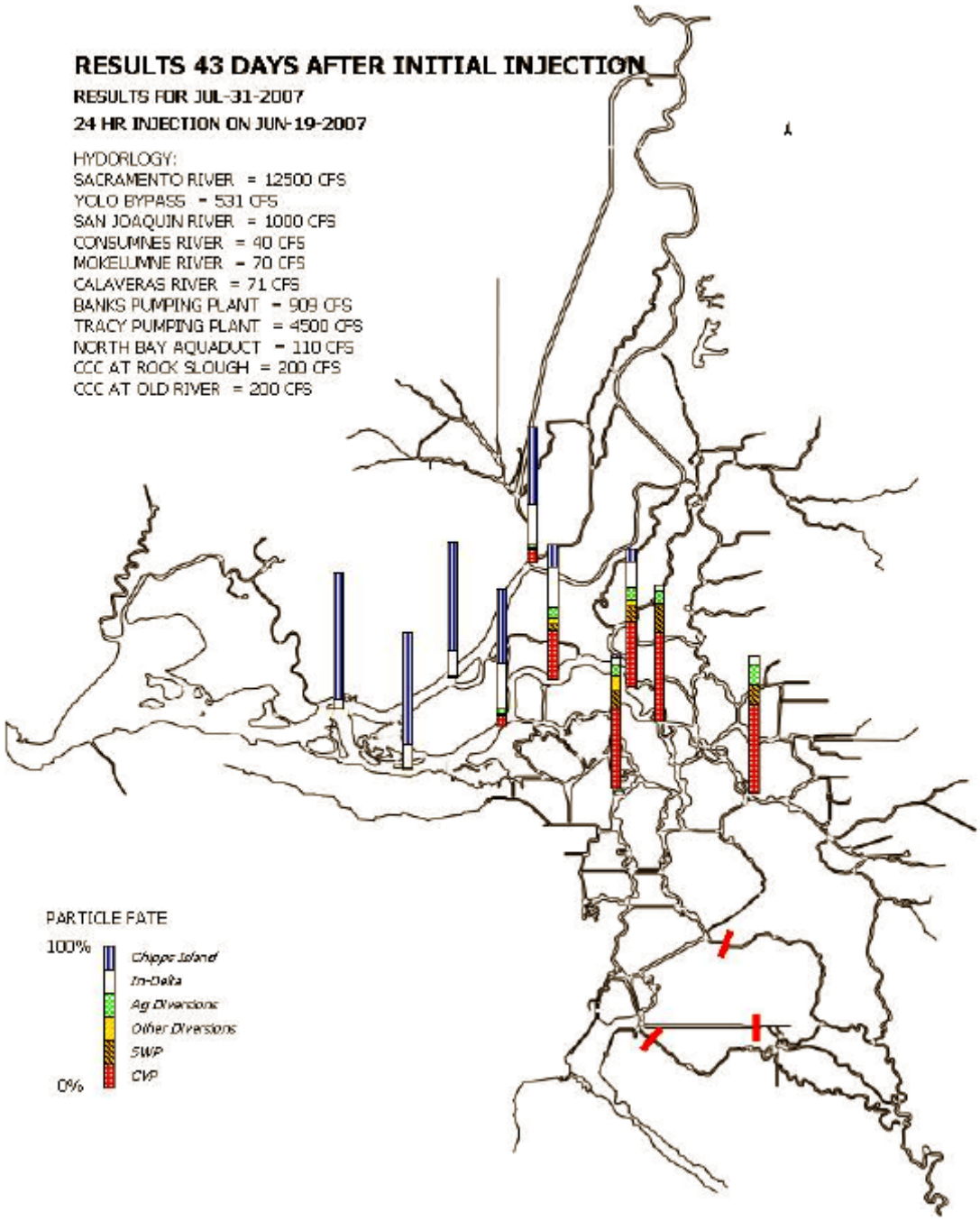
Attachment.

Particle Tracking Modeling results provided by the Department of Water Resources.

Scenario A, 5500 cfs Combined Exports, Ag Barriers Gates Tidally Operated, DXC Open

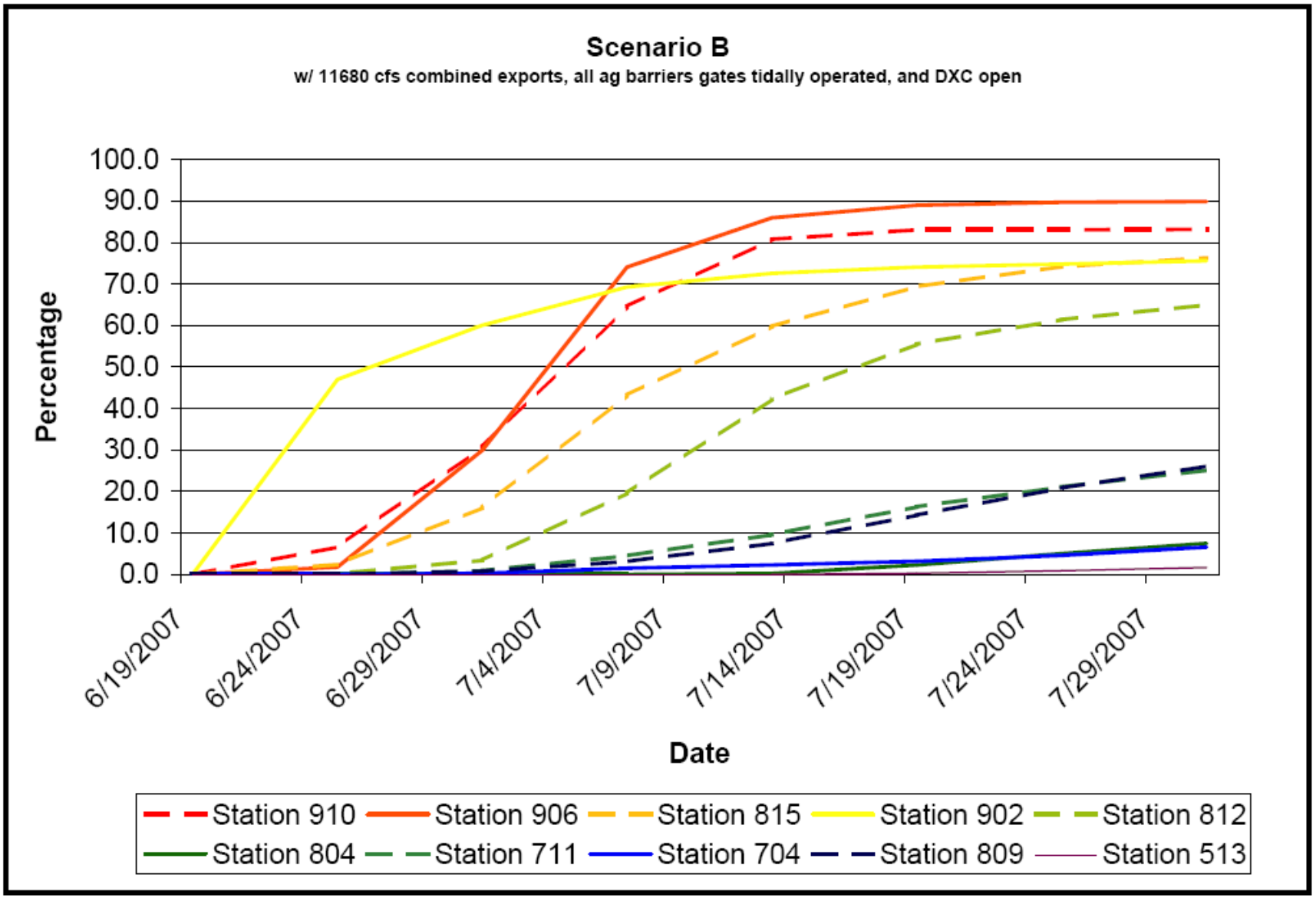
19-Jun-07		DIVERSION_AG	DIV_CCC_AT_OL	DIV_CONTRA_CO	DIV_NORTH_BAY	EXPORT_CVP	EXPORT_SWP	PAST_MTZ	PAST_CHIPPS	IN_DELTA	DIV_OTHER
	sta910	0.3	0	0	0	0	0	0	0	99.7	0
	sta906	0.1	0	0	0	0	0	0	0	99.9	0
	sta815	0	0	0	0	0	0	0	0	100	0
	sta902	0	0	0	0	0	0	0	0	100	0
	sta812	0	0	0	0	0	0	0	0	100	0
	sta804	0	0	0	0	0	0	0	0.5	99.5	0
	sta711	0	0	0	0	0	0	0	0	100	0
	sta704	0	0	0	0	0	0	0	0	100	0
	sta809	0	0	0	0	0	0	0	0	100	0
	sta513	0	0	0	0	0	0	0	13.2	86.8	0
25-Jun-07		DIVERSION_AG	DIV_CCC_AT_OL	DIV_CONTRA_CO	DIV_NORTH_BAY	EXPORT_CVP	EXPORT_SWP	PAST_MTZ	PAST_CHIPPS	IN_DELTA	DIV_OTHER
	sta910	2.5	0.4	0	0	6.6	0	0	0	90.5	0.4
	sta906	1.1	0.1	0.2	0	1.8	0	0	0	96.8	0.3
	sta815	0.5	0	0.4	0	2.4	0	0	0	96.7	0.4
	sta902	4.2	3.5	6.4	0	45.6	1.4	0	0	38.9	9.9
	sta812	0.3	0	0.1	0	0.2	0	0	0	99.4	0.1
	sta804	0.1	0	0	0	0	0	0.1	7.4	92.5	0
	sta711	0.6	0	0	0	0	0	0	0	99.4	0
	sta704	0.3	0	0	0	0	0	0	2.6	97.1	0
	sta809	0.3	0	0	0	0	0	0	0	99.7	0
	sta513	0	0	0	0	0	0	0.8	41.7	58.3	0
1-Jul-07		DIVERSION_AG	DIV_CCC_AT_OL	DIV_CONTRA_CO	DIV_NORTH_BAY	EXPORT_CVP	EXPORT_SWP	PAST_MTZ	PAST_CHIPPS	IN_DELTA	DIV_OTHER
	sta910	4.4	0.7	0.1	0	28.5	2.4	0	0	63.9	0.8
	sta906	2.8	0.8	0.6	0	28.3	2.2	0	0.1	65.2	1.4
	sta815	2.4	0.3	1.6	0	15.8	0.9	0	0.2	78.8	1.9
	sta902	5.8	3.7	7.2	0	53.2	7	0	0.1	23	10.9
	sta812	0.8	0.2	0.5	0	3.1	0.2	0.1	3.1	92.1	0.7
	sta804	0.4	0	0	0	0	0	5.1	49.7	49.9	0
	sta711	0.7	0	0.2	0	0.8	0.1	0.3	15.4	82.8	0.2
	sta704	0.4	0	0.1	0	0.2	0.1	5.5	53	46.2	0.1
	sta809	1	0	0.2	0	0.6	0.1	0.3	11.4	86.7	0.2
	sta513	0	0	0	0	0	0	20	81.6	18.4	0
7-Jul-07		DIVERSION_AG	DIV_CCC_AT_OL	DIV_CONTRA_CO	DIV_NORTH_BAY	EXPORT_CVP	EXPORT_SWP	PAST_MTZ	PAST_CHIPPS	IN_DELTA	DIV_OTHER
	sta910	7.6	0.9	0.1	0	46.3	6.3	0	0	38.8	1
	sta906	5.1	1.1	0.7	0	49.7	10.3	0	0.1	33	1.8
	sta815	4.2	0.6	2.6	0	27.4	4.1	0	1.2	59.9	3.2
	sta902	7	4	7.2	0	55.9	10.2	0	0.1	15.6	11.2
	sta812	2.7	0.5	1.5	0	10.7	1.5	0.3	4.7	78.4	2
	sta804	0.5	0	0	0	0	0	12	53.1	46.4	0
	sta711	1.2	0.1	0.3	0	2.7	0.3	2.5	24.9	70.5	0.4
	sta704	0.7	0	0.1	0	0.4	0.2	15.1	53.9	44.7	0.1
	sta809	1.5	0.1	0.2	0	1.6	0.4	1.8	18.7	77.5	0.3
	sta513	0.2	0	0	0	0	0	30.9	75.7	24.1	0
13-Jul-07		DIVERSION_AG	DIV_CCC_AT_OL	DIV_CONTRA_CO	DIV_NORTH_BAY	EXPORT_CVP	EXPORT_SWP	PAST_MTZ	PAST_CHIPPS	IN_DELTA	DIV_OTHER
	sta910	11.1	1	0.1	0	57.2	9	0	0	21.6	1.1
	sta906	7.8	1.2	0.8	0	59.7	13.8	0	0.1	16.6	2
	sta815	6.2	0.8	2.8	0	36.7	6.3	0.7	2.7	44.5	3.6
	sta902	8	4.1	7.2	0	57.7	10.8	0.2	0.9	11.3	11.3
	sta812	4.1	0.8	1.9	0	18.7	2.2	2	6.1	66.2	2.7
	sta804	0.7	0	0	0	0	0	27.5	57.7	41.6	0
	sta711	1.9	0.2	0.5	0	3.9	0.5	11.5	30.3	62.7	0.7
	sta704	1.1	0	0.1	0	1.2	0.2	29.6	59	38.4	0.1
	sta809	2	0.1	0.4	0	3	0.5	8.8	25.9	68.1	0.5
	sta513	0.2	0	0	0	0	0	46.4	77.9	21.9	0
19-Jul-07		DIVERSION_AG	DIV_CCC_AT_OL	DIV_CONTRA_CO	DIV_NORTH_BAY	EXPORT_CVP	EXPORT_SWP	PAST_MTZ	PAST_CHIPPS	IN_DELTA	DIV_OTHER
	sta910	12.1	1.2	0.1	0	61.7	11.1	0	0	13.8	1.3
	sta906	8.9	1.3	0.8	0	62.9	16.5	0	0.2	9.4	2.1
	sta815	8	0.9	2.9	0	41.6	7.9	1	5.3	33.4	3.8
	sta902	8.3	4.1	7.2	0	58.1	11.8	0.3	1.8	8.7	11.3
	sta812	5.8	1.1	2.6	0	26.5	3.1	3.2	11.7	49.2	3.7
	sta804	0.8	0	0	0	0.1	0.1	36.6	70.4	28.6	0
	sta711	2.1	0.3	0.8	0	5.8	1	17.6	44.4	45.6	1.1
	sta704	1.2	0	0.1	0	1.2	0.2	37	71.7	25.6	0.1
	sta809	2.6	0.1	0.6	0	4.4	0.6	14.5	40.9	50.8	0.7
	sta513	0.5	0	0	0	0	0	56.1	85.2	14.3	0
25-Jul-07		DIVERSION_AG	DIV_CCC_AT_OL	DIV_CONTRA_CO	DIV_NORTH_BAY	EXPORT_CVP	EXPORT_SWP	PAST_MTZ	PAST_CHIPPS	IN_DELTA	DIV_OTHER
	sta910	13.3	1.3	0.1	0	63.7	13.1	0	0	8.5	1.4
	sta906	9.1	1.4	0.8	0	64.1	18.6	0	0.2	5.8	2.2
	sta815	8.5	1	3	0	45	10	1.6	4.5	28	4
	sta902	8.6	4.2	7.2	0	58.5	12.6	0.4	1.1	7.8	11.4
	sta812	7.3	1.2	3	0	31.5	4.6	4	8.9	43.5	4.2
	sta804	1.1	0.1	0	0	0.4	0.1	40.1	62.7	35.6	0.1
	sta711	2.6	0.3	0.9	0	7.8	1.4	19.8	38.7	48.3	1.2
	sta704	1.3	0	0.1	0	1.7	0.2	40.1	63	33.7	0.1
	sta809	3.3	0.3	0.8	0	5.7	0.9	16.8	32.5	56.5	1.1
	sta513	0.5	0	0	0	0	0.1	58.8	80.3	19.1	0
31-Jul-07		DIVERSION_AG	DIV_CCC_AT_OL	DIV_CONTRA_CO	DIV_NORTH_BAY	EXPORT_CVP	EXPORT_SWP	PAST_MTZ	PAST_CHIPPS	IN_DELTA	DIV_OTHER
	sta910	14.4	1.3	0.1	0	63.8	14.3	0	0	6.1	1.4
	sta906	9.3	1.4	0.8	0	64.4	19.3	0.2	0.7	4.1	2.2
	sta815	9.1	1	3.2	0	47.1	11.1	3.3	9.3	19.2	4.2
	sta902	8.6	4.2	7.3	0	58.9	12.8	0.7	2.9	5.3	11.5
	sta812	8.3	1.2	3.2	0	35.2	5.7	7.2	16.9	29.5	4.4
	sta804	1.2	0.1	0	0	0.7	0.1	51.2	80	17.9	0.1
	sta711	2.8	0.3	0.9	0	9.5	1.6	29.8	55.6	29.3	1.2
	sta704	1.5	0	0.1	0	1.9	0.3	51.7	78.2	18	0.1
	sta809	3.7	0.3	0.9	0	7	1.2	25.7	53.7	33.2	1.2
	sta513	0.5	0	0	0	0	0.1	66.6	91.5	7.9	0

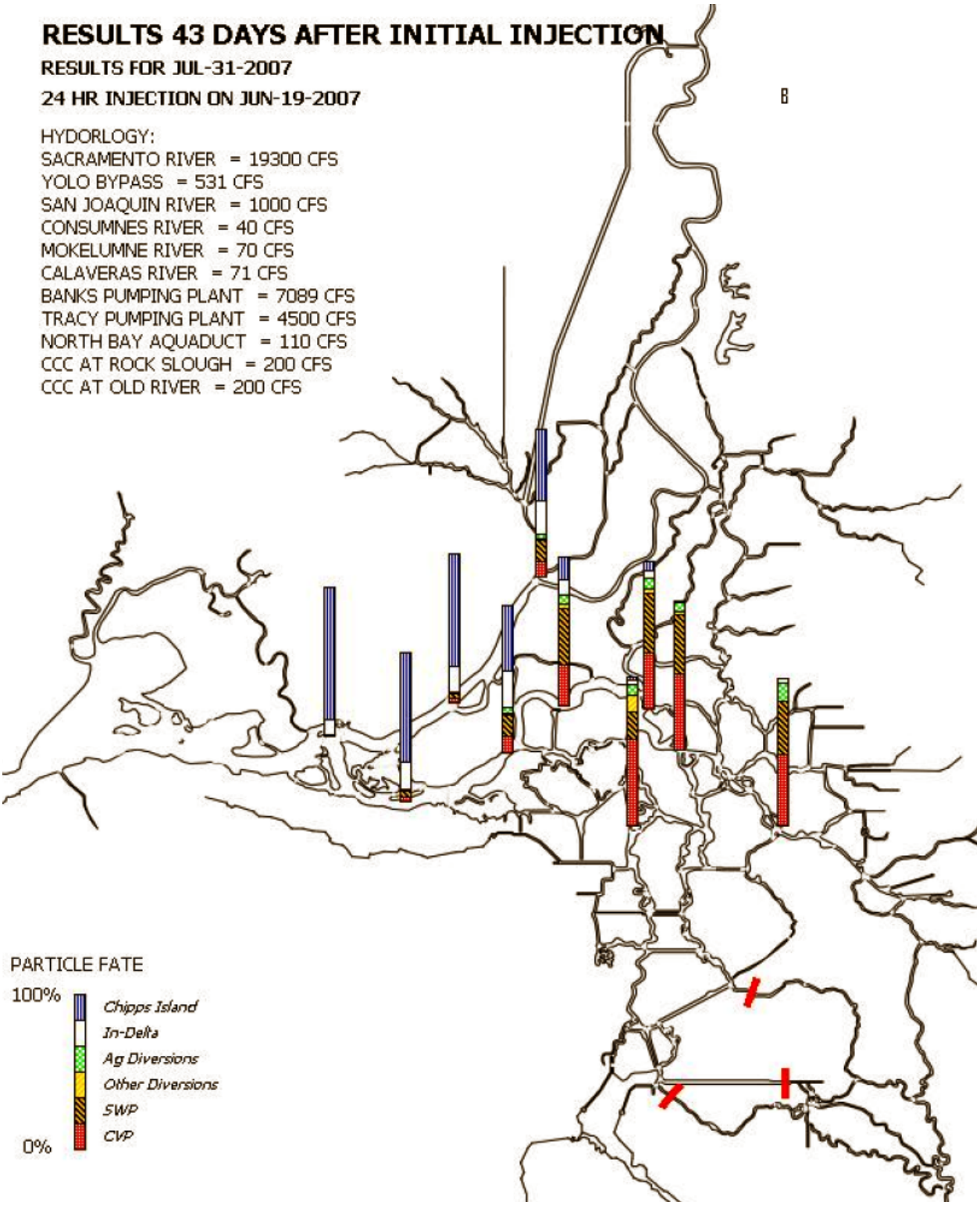

Scenario A
w/ 5500 cfs combined exports, all ag barriers gates tidally operated, and DXC open
Percentage of Particles Entrained at SWP
100
90
80
70
60
50
40
30
20
10
0
6/19/2007
6/24/2007
6/29/2007
7/4/2007
7/9/2007
7/14/2007
7/19/2007
7/24/2007
7/29/2007
Date
Station 910
Station 906
Station 815
Station 902
Station 812
Station 804
Station 711
Station 704
Station 809
Station 513


RESULTS 43 DAYS AFTER INITIAL INJECTION
RESULTS FOR JUL-31-2007
24 HR INJECTION ON JUN-19-2007
HYDORLOGY:
SACRAMENTO RIVER = 12500 CFS
YOLO BYPASS = 531 CFS
SAN JOAQUIN RIVER = 1000 CFS
CONSUMNES RIVER = 40 CFS
MOKELUMNE RIVER = 70 CFS
CALAVERAS RIVER = 71 CFS
BANKS PUMPING PLANT = 909 CFS
TRACY PUMPING PLANT = 4500 CFS
NORTH BAY AQUADUCT = 110 CFS
CCC AT ROCK SLOUGH = 200 CFS
CCC AT OLD RIVER = 200 CFS
PARTICLE FATE
100%
0%
Chipps Island
In-Delta
Ag Diversions
Other Diversions
SWP
CVP

Scenario B, 11680 cfs Combined Exports, Ag Barriers Gates Tidally Operated, DXC Open

19-Jun-07		DIVERSION_AG	DIV_CCC_AT_OL	DIV_CONTRA_CO	DIV_NORTH_BAY	EXPORT_CVP	EXPORT_SWP	PAST_MTZ	PAST_CHIPPS	IN_DELTA	DIV_OTHER
	sta910	0.3	0	0	0	0	0	0	0	99.7	0
	sta906	0.1	0	0	0	0	0	0	0	99.9	0
	sta815	0	0	0	0	0	0	0	0	100	0
	sta902	0	0	0	0	0	0	0	0	100	0
	sta812	0	0	0	0	0	0	0	0	100	0
	sta804	0	0	0	0	0	0	0	0.5	99.5	0
	sta711	0	0	0	0	0	0	0	0	100	0
	sta704	0	0	0	0	0	0	0	0	100	0
	sta809	0	0	0	0	0	0	0	0	100	0
	sta513	0	0	0	0	0	0	0	13.2	86.8	0
25-Jun-07		DIVERSION_AG	DIV_CCC_AT_OL	DIV_CONTRA_CO	DIV_NORTH_BAY	EXPORT_CVP	EXPORT_SWP	PAST_MTZ	PAST_CHIPPS	IN_DELTA	DIV_OTHER
	sta910	2.5	0.4	0	0	6.6	0	0	0	90.5	0.4
	sta906	1.1	0.1	0.2	0	1.8	0	0	0	96.8	0.3
	sta815	0.5	0	0.4	0	2.4	0	0	0	96.7	0.4
	sta902	4.2	3.5	6.4	0	45.6	1.4	0	0	38.9	9.9
	sta812	0.3	0	0.1	0	0.2	0	0	0	99.4	0.1
	sta804	0.1	0	0	0	0	0	0.1	7.4	92.5	0
	sta711	0.6	0	0	0	0	0	0	0	99.4	0
	sta704	0.3	0	0	0	0	0	0	2.6	97.1	0
	sta809	0.3	0	0	0	0	0	0	0	99.7	0
	sta513	0	0	0	0	0	0	0.8	41.7	58.3	0
1-Jul-07		DIVERSION_AG	DIV_CCC_AT_OL	DIV_CONTRA_CO	DIV_NORTH_BAY	EXPORT_CVP	EXPORT_SWP	PAST_MTZ	PAST_CHIPPS	IN_DELTA	DIV_OTHER
	sta910	4.4	0.6	0.1	0	28.3	2.4	0	0	64.2	0.7
	sta906	2.8	0.9	0.6	0	27.6	2.3	0	0.1	65.7	1.5
	sta815	2.3	0.4	1.7	0	15.1	1	0	0.2	79.3	2.1
	sta902	5.7	3.7	7.2	0	53.1	7	0	0.1	23.2	10.9
	sta812	0.8	0.2	0.5	0	3.2	0.2	0.1	3.1	92	0.7
	sta804	0.4	0	0	0	0	0	5.1	50	49.6	0
	sta711	0.7	0	0.2	0	0.8	0.1	0.3	16.2	82	0.2
	sta704	0.4	0	0.1	0	0.2	0.1	5.5	53.1	46.1	0.1
	sta809	1	0	0.2	0	0.7	0.1	0.3	11.5	86.5	0.2
	sta513	0	0	0	0	0	0	20	82.4	17.6	0
7-Jul-07		DIVERSION_AG	DIV_CCC_AT_OL	DIV_CONTRA_CO	DIV_NORTH_BAY	EXPORT_CVP	EXPORT_SWP	PAST_MTZ	PAST_CHIPPS	IN_DELTA	DIV_OTHER
	sta910	8.7	0.7	0.1	0	42.2	22.4	0	0	25.9	0.8
	sta906	4.5	1.4	0.7	0	44.5	29.6	0	0	19.3	2.1
	sta815	4	0.7	2.3	0	25.8	17.4	0	1.1	48.7	3
	sta902	6.3	4	7.3	0	55.5	13.8	0	0.3	12.8	11.3
	sta812	2.1	0.5	1.1	0	10.6	9	0.4	4.3	72.4	1.6
	sta804	0.5	0	0	0	0	0	13	51.2	48.3	0
	sta711	1.3	0	0.4	0	2.9	1.6	2.2	23.7	70.1	0.4
	sta704	0.6	0	0.2	0	0.8	0.7	13.4	53.6	44.1	0.2
	sta809	1.7	0	0.3	0	2.2	0.9	2.3	17.5	77.4	0.3
	sta513	0	0	0	0	0	0	31.2	75.3	24.7	0
13-Jul-07		DIVERSION_AG	DIV_CCC_AT_OL	DIV_CONTRA_CO	DIV_NORTH_BAY	EXPORT_CVP	EXPORT_SWP	PAST_MTZ	PAST_CHIPPS	IN_DELTA	DIV_OTHER
	sta910	10.7	0.8	0.1	0	47.4	33.4	0	0	7.6	0.9
	sta906	5.6	1.4	0.7	0	48.6	37.4	0	0	6.3	2.1
	sta815	5	0.9	2.5	0	31	28.8	0.4	2.5	29.3	3.4
	sta902	7.2	4	7.3	0	56.3	16.3	0.1	0.9	8	11.3
	sta812	3.1	0.8	1.7	0	20	22.3	2.7	7.5	44.6	2.5
	sta804	0.8	0	0.1	0	0.1	0.1	26.6	54.1	44.8	0.1
	sta711	2	0	0.5	0	5	4.6	11.2	30	57.9	0.5
	sta704	0.9	0	0.2	0	1.3	1	27.2	55.6	41	0.2
	sta809	2.2	0	0.3	0	4.1	3.4	9.7	24	66	0.3
	sta513	0.1	0	0	0	0	0	45.9	77.3	22.6	0
19-Jul-07		DIVERSION_AG	DIV_CCC_AT_OL	DIV_CONTRA_CO	DIV_NORTH_BAY	EXPORT_CVP	EXPORT_SWP	PAST_MTZ	PAST_CHIPPS	IN_DELTA	DIV_OTHER
	sta910	11.3	0.8	0.1	0	47.6	35.5	0	0	4.7	0.9
	sta906	6.1	1.4	0.7	0	49.9	39.1	0	0.2	2.6	2.1
	sta815	6.3	1	2.7	0	35	34.4	1.4	4.6	16	3.7
	sta902	7.5	4	7.3	0	56.7	17.4	0.2	1.1	6	11.3
	sta812	4.5	0.9	2.1	0	23.9	31.6	4	11.3	25.7	3
	sta804	1	0	0.1	0	1.2	1.1	34.2	66.9	29.7	0.1
	sta711	2.4	0.2	0.7	0	7.7	8.6	17.9	40.8	39.6	0.9
	sta704	0.9	0	0.2	0	1.8	1.4	37.8	68.9	26.8	0.2
	sta809	2.5	0	0.5	0	7.2	7.1	14.9	37	45.7	0.5
	sta513	0.1	0	0.1	0	0.1	0.2	55.6	83.3	16.2	0.1
25-Jul-07		DIVERSION_AG	DIV_CCC_AT_OL	DIV_CONTRA_CO	DIV_NORTH_BAY	EXPORT_CVP	EXPORT_SWP	PAST_MTZ	PAST_CHIPPS	IN_DELTA	DIV_OTHER
	sta910	11.8	0.8	0.1	0	47.6	35.5	0	0	4.2	0.9
	sta906	6.2	1.4	0.7	0	50.2	39.5	0	0.1	1.9	2.1
	sta815	6.9	1.1	2.7	0	36.4	37.8	1.7	4.5	10.6	3.8
	sta902	7.6	4	7.3	0	57	17.8	0.2	1.1	5.2	11.3
	sta812	5.7	1.1	2.1	0	25.9	35.5	4.9	10.4	19.3	3.2
	sta804	1.2	0	0.2	0	2.2	2.8	38.2	59.9	33.7	0.2
	sta711	3.1	0.3	0.8	0	9.6	11.5	19.9	34.8	39.9	1.1
	sta704	1	0	0.2	0	2.6	2	41.4	61.8	32.4	0.2
	sta809	3.3	0.1	0.8	0	9.7	11.1	17.4	31.4	43.6	0.9
	sta513	0.3	0	0.1	0	0.3	0.6	58.9	78.7	20	0.1
31-Jul-07		DIVERSION_AG	DIV_CCC_AT_OL	DIV_CONTRA_CO	DIV_NORTH_BAY	EXPORT_CVP	EXPORT_SWP	PAST_MTZ	PAST_CHIPPS	IN_DELTA	DIV_OTHER
	sta910	12.9	0.8	0.1	0	47.6	35.6	0	0	3	0.9
	sta906	6.4	1.4	0.7	0	50.2	39.7	0.1	0.6	1.1	2.1
	sta815	7.3	1.2	2.7	0	37.2	39.1	2.9	6.8	5.7	3.9
	sta902	7.6	4	7.3	0	57.3	18.3	0.5	2	3.5	11.3
	sta812	6.3	1.1	2.1	0	27.1	37.9	8.4	15.5	10	3.2
	sta804	1.5	0	0.2	0	3.3	4.2	48	72.3	18.5	0.2
	sta711	3.5	0.3	0.8	0	10.6	14.5	27.8	47.5	22.8	1.1
	sta704	1.3	0	0.3	0	3.3	3.3	50.8	74.6	17.3	0.3
	sta809	4	0.2	1.1	0	11.9	14.2	25.7	43.8	24.8	1.3
	sta513	0.4	0	0.2	0	0.6	1.1	67.5	87.4	10.3	0.2


Scenario B
w/ 11680 cfs combined exports, all ag barriers gates tidally operated, and DXC open
Percentage
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
6/19/2007
6/24/2007
6/29/2007
7/4/2007
7/9/2007
7/14/2007
7/19/2007
7/24/2007
7/29/2007
Date
Station 910
Station 906
Station 815
Station 902
Station 812
Station 804
Station 711
Station 704
Station 809
Station 513


RESULTS 43 DAYS AFTER INITIAL INJECTION
RESULTS FOR JUL-31-2007
24 HR INJECTION ON JUN-19-2007
HYDORLOGY:
SACRAMENTO RIVER = 19300 CFS
YOLO BYPASS = 531 CFS
SAN JOAQUIN RIVER = 1000 CFS
CONSUMNES RIVER = 40 CFS
MOKELUMNE RIVER = 70 CFS
CALAVERAS RIVER = 71 CFS
BANKS PUMPING PLANT = 7089 CFS
TRACY PUMPING PLANT = 4500 CFS
NORTH BAY AQUADUCT = 110 CFS
CCC AT ROCK SLOUGH = 200 CFS
CCC AT OLD RIVER = 200 CFS
B
PARTICLE FATE
100%
0%
Chipps Island
In-Delta
Ag Diversions
Other Diversions
SWP
CVP