San Joaquin County and Delta Water Quality Coalition

San Joaquin County Resource Conservation District
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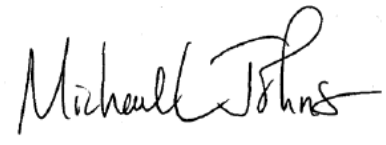
April 1, 2012

Pamela Creedon
Chris Jimmerson
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670-6114

Dear Ms. Creedon,

The San Joaquin County and Delta Water Quality Coalition (SJCDWQC) is submitting the Management Plan Update Report which updates the SJCDWQC Management Plan approved on January 23, 2009. The report includes information on activities conducted during 2011. The 2012 Management Plan Update Report (2012 MPUR) is being submitted to inform the Regional Board of progress made on the management of exceedances within the Coalition region. Included in the report is a status update of constituents and subwatersheds requiring a management plan, an evaluation of the current Management Plan strategy including a status update of high priority subwatershed performance goals, a summary of any newly implemented management practices in the 2008-2010 and 2010-2012 high priority subwatersheds and a summary of current management practices within 2011-2013 high priority subwatersheds. In addition, the 2012 MPUR includes an evaluation of management practice effectiveness and a status review of TMDL constituents and Basin Plan requirements.

Submitted respectfully,



Michael L. Johnson
Technical Program Manager

Management Plan Update Report

San Joaquin County & Delta Water Quality Coalition

January 2011 – December 2011

April 1, 2012

Irrigated Lands Regulatory Program

Central Valley Regional Water Quality Control Board

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A	Assessment
AMR	Annual Monitoring Report
APN	Assessor Parcel Number
AWEP	Agricultural Water Enhancement Program
BMP	Best Management Practice
C	Core
CURES	Coalition for Urban/Rural Environmental Stewardship
CVRWQCB	Central Valley Regional Water Quality Control Board
CV-SALTS	Central Valley Salinity Alternatives for Long-Term Sustainability
DDD	Dichlorodiphenyldichloroethane
DDE	Dichlorodiphenyldichloroethylene
DDT	Dichlorodiphenyltrichloroethane
DO	Dissolved Oxygen
DPR	Department of Pesticide Regulation
DWSC	Deep Water Ship Channel
EQIP	Environmental Quality Incentives Program
HCH	Hexachlorocyclohexane
ID	Identification
ILRP	Irrigated Lands Regulatory Program
MLJ-LLC	Michael L. Johnson, LLC
MPM	Management Plan Monitoring

MPUR	Management Plan Update Report
MRP	Monitoring and Reporting Program Order No. R5-2008-0005
MRPP	Monitoring and Reporting Program Plan
NA	Not Applicable
ND	Not Detected
NM	Normal Monitoring
NRCS	Natural Resource Conservation Service
PCA	Pesticide Control Advisor
pH	Power of Hydrogen
Prop 84	Proposition 84
PUR	Pesticide Use Report
SC	Specific Conductance
SG	Statistically significantly different from control; Greater than 80% threshold
SJCDWQC	San Joaquin County & Delta Water Quality Coalition
SL	Statistically significantly different from control; Less than 80% threshold
TDS	Total Dissolved Solids
TIE	Toxicity Identification Evaluation
TMDL	Total Maximum Daily Load
TOC	Total Organic Carbon
TRS	Township, Range, Section
WQO	Water Quality Objective
WQTL	Water Quality Trigger Limit

LIST OF UNITS

cfs	cubic feet per second
cm	centimeter
L	Liter
lbs	pounds
mg	milligram
mph	miles per hour
MPN/100mL	most probable number per 100 milliliters
sec	second
µg	microgram
µS	microsiemens
µg/kg dw	microgram per kilogram of dry weight

SJCDWQC MANAGEMENT PLAN UPDATES AND AMENDMENTS

Table A. SJCDWQC Management Plan Updates and Amendments Summary.

ITEM NUMBER	AMENDMENTS DESCRIPTIONS	DATE SUBMITTED[1]	MANAGEMENT PLAN PAGE NUMBER	DATE APPROVED
	Original SJCDWQC Management Plan Report	**September 30, 2008**		**January 23, 2009**
1	2009 Management Plan Update Report.	April 1, 2009	NA	October 14, 2009
2	Request for additional guidance for Management Plan Update Reports.	May 20, 2009	NA	October 22, 2009
3	Request to modify Management Plan schedules.	August 3, 2009	NA	December 29, 2009
4	2010 Management Plan Update Report.	April 1, 2010	NA	August 24, 2010
5	2010 Management Plan Update Report Addendum to Management Practice Summary section.	June 1, 2010	Pages 1-16 of Addendum	August 24, 2010
6	Submittal of updated Addendum to 2010 Management Plan Update Report to correct Exceedance Tally results, Performance Goals table, and Appendix I Site Subwatershed table and verbiage.	June 4, 2010	Table 4, page 9, Table 11, page 32-33, Appendix I Table IV-5, pages 102-104	August 24, 2010
7	Request to update Management Plan Performance Goals table for 3rd priority.	December 14, 2010	NA	January 10, 2011
8	2011 Management Plan Update Report.	April 1, 2011	NA	June 8, 2011
9	Request to update Management Plan Performance Goals table for 4th priority.	October 24, 2011	NA	November 14, 2011
10	Request to remove constituents from site specific management plan.	January 6, 2012	NA	TBD
11	Due to a typo and inconsistency between Figures 1 and 2, follow up due dates have been updated in Figure 1 to be consistent with the Coalitions approved Performance Goal deadline schedule.	April 1, 2012	MPUR 2012, page 18	NA

[1] All deliverables are submitted electronically (quarterly monitoring data reports, Annual Monitoring Report, Annual Management Plan Update Report).
NA-Not applicable.
TBD-To Be Determined; Regional Board is still reviewing.

EXECUTIVE SUMMARY

The San Joaquin County and Delta Water Quality Coalition (SJCDWQC or Coalition) is submitting a Management Plan Update Report (MPUR) on the status and methods used to identify agriculture sources, track implemented management practices, and progress toward meeting its performance goals as outlined in the SJCDWQC Management Plan. A Management Plan Update is submitted every April 1 to report on the previous year's activities and update management plan implementation schedules and timelines for reporting to the Central Valley Regional Water Quality Control Board (CVRWQCB or Regional Board). This is the fourth yearly update to the Coalition's Management Plan.

Water quality monitoring was conducted during every month from January through December 2011 as described in the SJCDWQC Monitoring and Reporting Program Plan (MRPP, pages 32-39). Management Plan sampling was conducted based on prior exceedances at Coalition monitoring sites. Monitoring was performed at 12 Management Plan Monitoring (MPM) sites; Duck Creek @ Highway 4, Lone Tree Creek @ Jack Tone Road, and Unnamed Drain to Lone Tree Creek @ Jack Tone Road (also known as Temple Creek), Grant Line Canal @ Clifton Court Rd, Grant Line Canal near Calpack Rd, Littlejohns Creek @ Jack Tone Rd, French Camp Slough @ airport Way, Mokelumne River @ Bruella Rd, Terminous Tract Drain @ Hwy 12, Kellogg Creek along Hoffman Ln, Mormon Slough @ Jack Tone Rd and Sand Creek along Hwy 4 Bypass. Based on the prioritization of exceedances, MPM was conducted for water column toxicity to *Ceriodaphnia dubia* and *Selenastrum capricornutum*, and sediment toxicity to *Hyalella azteca*, copper, chlorpyrifos, diazinon, dieldrin, diuron, disulfoton and simazine. Additional samples were collected for chlorpyrifos and diazinon for the Coalition's Department of Pesticide Regulation (DPR) grant to reduce the impact of agricultural discharge on water quality during January and February 2011.

As a result of 2011 monitoring, several new site/constituent specific management plans are required including:

- pH
  - Bear Creek @ North Alpine Rd
  - Littlejohns Creek @ Jack Tone Rd
- Nitrate + Nitrite as N
  - Walthall Slough @ Woodward Ave
- *E. coli*
  - Bear Creek @ North Alpine Rd
- Chlorpyrifos
  - Bear Creek @ North Alpine Rd
  - Walthall Slough @ Woodward Ave
- Malathion
  - Bear Creek @ North Alpine Rd

The Coalition developed an updated flow chart for its MPM strategy. The strategy is updated to include MPM for high priority subwatersheds during Year 0, Year 1, and Year 2. Year 0 refers to the year prior to when the subwatershed becomes high priority and allows the Coalition to utilize results from recent monitoring when contacting growers in the subwatershed. When a site becomes a high priority site subwatershed, the Coalition makes contacts with individuals who have the potential for direct drainage and are known to apply constituents of concern. Contacts occur between January 1 and March 30 of Year 1 in order to schedule meetings between February 1 and September 30. Meetings are used to inform growers of current water quality impairments and potential management practices that can be implemented to reduce impairments of water quality due to agricultural discharge. At the meetings, growers are encouraged to complete surveys and return them to Coalition representatives (either at the meeting or by mail). It is anticipated that all surveys are completed by October 1 of Year 1. Surveys document the current management practices, and they identify additional management practices that the member intends to implement in Year 1 and/or Year 2. The Coalition conducts follow up surveys with growers between September 1 of Year 1 and March 30 of Year 2. Follow up may be extended to Year 3 depending on information obtained from the grower on when they plan to implement practices; in some cases a third year or more may be necessary for funds to be available for structural improvements. Follow up surveys document what newly implemented practices growers have implemented since initial contacts were complete. The returned surveys document whether growers implemented those practices in Year 1 and if not, whether they plan to implement those practices in Year 2. If the grower indicates that they do not intend to implement additional practices despite their previous declaration that they would, they are queried as to why they decided not to implement practices (e.g. they no longer farm, no available funds).

The Coalition developed High Priority Site Subwatershed Performance Goals (hereafter referred to as Performance Goals) for its first three high priority site subwatersheds. Performance goals are submitted for approval each time a new set of subwatersheds rotates into high priority status and are built on the following actions essential to the Management Plan strategy:

Determine number/type of management practices currently in place, based on Assessor Parcel Number (APN) associated with baseline survey responses

1. Grower Group Contacts / Individual Contacts
2. Implementation of new management practices
3. Assess number/type of new management practices implemented
4. Evaluate effectiveness of new management practices

Performance goals, measures, outputs and completion dates for second priority subwatersheds were approved by the Regional Board on December 29, 2009. The goals were developed in coordination with Regional Board staff after the evaluation of the effectiveness of the Coalition's Management Plan strategy.

In addition, the Coalition targeted additional growers in all first priority subwatersheds during 2010 that may be contributing to continued water quality impairments, specifically the exceedances of the Water Quality Trigger Limit (WQTL) for chlorpyrifos. Topics to be discussed during additional focused outreach meetings include managing storm and irrigation runoff (including improving water infiltration, capturing and/or recycling runoff water, and treating runoff with Landguard or PAM), reducing drift to water sources (including noting application conditions, equipment, product choice, buffer zones, and application method) as well as discontinuing, reducing, or changing the type of pesticide used (switching from liquid to granule form). Outreach to these additional growers began in the Duck Creek subwatershed in 2010 and is scheduled to continue in 2012 at all three of the first priority subwatersheds as well as second priority subwatershed site Littlejohns Creek @ Jack Tone Rd.

For the third set of high priority subwatersheds (2011–2013), the Coalition completed Performance Measure 1.1 (100% of identified growers contacted), Performance Measure 1.2 (Contact owners/operators representing at least 1,000 acres of member acres) of Performance Goal 1; Performance Measure 2.1 (document current management practices at 100% of identified growers) and 2.2 (document management practices that growers were encouraged to implement) of Performance Goal 2. Performance Measure 3.1 (document new management practices implemented by growers) of Performance Goal 3, Performance Measure 4.1 (Assess water quality results from Coalition monitoring locations) of Performance Goal 4, and Performance Goal 5 are in the process of being completed.

Overall, the following conclusions can be drawn about Coalition outreach efforts:

- High priority subwatersheds receiving focused outreach have seen a reduction in exceedances,
- The drop in exceedances coincides with implementation of management practices encouraged by the Coalition,
- Subwatersheds with high numbers of exceedances of pesticides either have not completed or started focused outreach,
- Growers in the SJCDWQC region are taking advantage of available funding resources to be used to implement management practices that improve water quality,
- Growers across the SJCDWQC region are implementing management practices,
- Additional focused outreach continues in first and second priority subwatersheds with continued water quality impairments, and
- After demonstrating two or more consecutive years of monitoring without exceedances, the Coalition has been able to petition to the Regional Board to remove certain constituents from active management plans from seven high priority subwatersheds including all of the first and third priority subwatersheds.

Other compliance issues involve Total Maximum Daily Load (TMDL) constituents. The SJCDWQC established monitoring and management activities for TMDL constituents as required in the Regional Board's Basin Plan for the Sacramento and San Joaquin River basins. The San Joaquin River TMDL for chlorpyrifos and diazinon establishes six compliance points along the River including San Joaquin River @ Vernalis. Although a portion of this drainage area is within the SJCDWQC boundary (i.e. the

Stanislaus River), this monitoring location is also the farthest downstream compliance point and therefore receives most of its drainage from areas outside of the Coalition region. It was therefore agreed that this monitoring location and associated compliance and reporting responsibilities would be managed by the East San Joaquin Water Quality Coalition and the Westside Water Quality Coalition.

Chlorpyrifos and Diazinon

To establish compliance with water quality objectives (WQOs), loading capacity and loading allocations applicable to chlorpyrifos and diazinon discharges into Delta Waterways, the Coalition monitors at least one location within each of the listed Delta Waterway areas (export area, central portion, eastern portion and southern portion) based on the Coalition's zone monitoring strategy. Monitoring for chlorpyrifos and diazinon is conducted monthly within at least one location in a zone with the goal of monitoring at least one storm event each year.

Since monitoring began in 2004 through 2011, samples collected for Normal Monitoring, MPM and DPR grant monitoring resulted in a total of 107 exceedances of the chlorpyrifos WQTL (0.015 µg/L) within 21 of the Coalition subwatersheds. There were eight exceedances of the diazinon WQTL (0.1 µg/L) in five subwatersheds. Monitoring in 2011 resulted in a total of 15 exceedances of the chlorpyrifos WQO and no exceedances of the diazinon WQO. There are no instances of diazinon exceedances since January 2008.

In 2011, chlorpyrifos exceedances resulting in noncompliance with the load allocations occurred in every zone except for Zones 6 at a total of nine sites. Six of the nine sites are currently high priority subwatersheds under the SJCDWQC Management Plan and the other three sites are scheduled to rotate into high priority status in 2013. Three exceedances of the chlorpyrifos WQO occurred in Zone 1 at Bear Creek @ North Alpine Rd. In Zone 2, a total of seven exceedances of the chlorpyrifos WQO occurred from samples collected at Duck Creek @ Hwy 4, French Camp Slough @ Airport Way, Littlejohns Creek @ Jack Tone Rd, Mormon Slough @ Jack Tone Rd and Unnamed Drain to Lone Tree Creek @ Jack Tone Rd (also known as Temple Creek). In Zone 3 a there was a single exceedance of the chlorpyrifos WQO at Terminous Tract Drain @ Hwy 12. Samples collected from Zone 4 at Roberts Island Drain @ Holt Rd resulted in two exceedances of the chlorpyrifos WQO. Monitoring from Zone 5 at Walthall slough @ Woodward Ave also exceeded the chlorpyrifos WQO two times.

Salt and Boron

The Regional Board and stakeholders initiated the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) in July 2008 to facilitate efforts needed for the efficient management of salinity in the Central Valley. Coalition representatives attend CV-SALTS meetings and participate in planning and reviewing studies relevant to the development of a Basin Plan amendment for salt and boron. Coalition technical consultants participated in several CV-SALTS committees including the Technical Advisory Committee, the Knowledge Gained and BMP Subcommittees.

Dissolved Oxygen

To demonstrate compliance with the Basin Plan and "The Control Program for Factors Contributing to the Dissolved Oxygen (DO) Impairment in the Stockton Deep Water Ship Channel", agriculturally-influenced tributaries to the San Joaquin River are routinely monitored in Zones 1 - 5, as described in the Coalition's MRPP (page 53-64). Zones 2, 4 and 5 have the potential to drain into the Stockton Deep Water Ship Channel (DWSC) which has an approved TMDL for DO. The Coalition included an analysis which compares DO results from the Stockton DWSC to upstream tributary results from Zone 2 monitoring.

Methyl Mercury

The Regional Board adopted on April 22, 2010 a Sacramento River and San Joaquin River Delta mercury control program. On October 20, 2011, the EPA approved the *Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Methyl mercury and Total Mercury in the Sacramento-San Joaquin River Delta Estuary*. Several meetings were held over the past year as part of the stakeholder process. Coalition representatives John Herrick, John Brodie and Mike Wackman attend many of the Stakeholder meetings to ensure the Coalition is well informed. The Coalition will incorporate the outcomes of the mercury control plan into its management plan so that members remain in compliance and continue to implement measures to improve water quality.

INTRODUCTION

The San Joaquin County and Delta Water Quality Coalition (SJCDWQC or Coalition) is submitting a Management Plan Update Report (MPUR) on the status of water quality in the region. Included are identifying the sources of agricultural discharges, tracking implemented management practices, and reporting progress toward meeting performance goals as outlined in the SJCDWQC Management Plan.

The MPUR includes the following:

1. Status of constituents and subwatersheds requiring a management plan
2. Evaluation of the current Management Plan strategy
3. Status of high priority subwatershed performance goals
4. Summary of newly implemented management practices
5. Evaluation of management practice effectiveness
6. Status of Total Maximum Daily Load (TMDL) constituents and Basin Plan requirements

The Coalition compiled a detailed analysis of high priority subwatersheds (2008 – 2010, 2010 – 2012, 2011– 2013 and 2012–2014) including monitoring and exceedance histories, sourcing, outreach and management practice tracking. The site subwatershed analysis is supplemental to this report and is attached in Appendix I.

OVERVIEW OF MONITORING AND RESULTS

This is the fourth annual update to the Coalition's Management Plan. In this report, monitoring data for the previous year are evaluated for exceedances and water quality improvements. This update includes an assessment of water quality based on 2011 monitoring results including new exceedances and new site/constituents requiring management plans.

During 2011, monitoring was conducted as outlined in the Coalition's MRPP (pages 32-60). In addition, Management Plan Monitoring (MPM) in 2011 was conducted at high priority locations for high priority constituents requiring a management plan. The Coalition's Annual Monitoring Report (AMR) submitted on March 1, 2012 lists the locations, dates and type of sampling that was conducted 2011.

There were 15 sites monitored from January through December 2011 (Table 1). Thirteen of the 15 sites were monitored for management plan constituents either additionally or as part of Assessment Monitoring. Management Plan Monitoring was conducted for copper, chlorpyrifos, diazinon, dieldrin, diuron, disulfoton and simazine, water column toxicity (*C. dubia* and *S. capricornutum*) and sediment toxicity (*H. azteca*).

Additional samples were analyzed for chlorpyrifos and diazinon as part of a Department of Pesticide Regulation (DPR) grant to reduce the impact of agricultural discharge on water quality. The DPR grant monitoring began in June 2010 and continued through February 2011.

Table 1. January–December 2011 Core (C), Assessment (A) and Management Plan Monitoring (MPM) sites and locations.

Zone	Site Type[1]	2011 Monitoring	Site Name	Station Code	Latitude	Longitude
1	Assessment	A	Bear Creek @ North Alpine Rd	531BCANAR	38.07431	-121.21090
1	Core	A, MPM	Mokelumne River @ Bruella Rd	531XMRABR	38.16022	-121.20643
2	Assessment	MPM,DPR	Duck Creek @ Highway 4	531XDCAHF	37.94949	-121.18208
2	Core	A, MPM	French Camp Slough @ Airport Way	531SJC504	37.88172	-121.24933
2	Assessment	MPM,DPR	Littlejohns Creek @ Jack Tone Rd	531XLCAJR	37.88958	-121.14727
2	Assessment	MPM,DPR	Lone Tree Creek @ Jack Tone Rd	531XLTCJR	37.83754	-121.14460
2	Assessment	MPM	Mormon Slough @ Jack Tone Road	544MSAJTR	37.96470	-121.14880
2	Assessment	MPM,DPR	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	531UDLTAJ	37.85360	-121.14570
3	Core	C, MPM	Terminous Tract Drain @ Hwy 12	544XTTHWT	38.11558	-121.49380
4	Assessment	MPM	Kellogg Creek along Hoffman Lane	544XKCAHL	37.88188	-121.65221
4	Assessment	MPM	Grant Line Canal @ Clifton Court Rd	544XGLCAA	37.84182	-121.52999
4	Assessment	MPM	Grant Line Canal near Calpack Rd	544XGLCCR	37.82084	-121.50009
4	Core	A, MPM	Roberts Island Drain @ Holt Rd	544RIDAHT	37.95560	-121.42230
5	Core	C	Walthall Slough @ Woodward Ave	544WSAWAV	37.77046	-121.29227
6		MPM	Sand Creek @ Hwy 4 Bypass	544SCAHFB	37.94750	-121.74300

Blank cells under 'Site Type' column indicate that the site is not a Core Site and no Assessment Monitoring takes place in the zone.

[1] Site types are either Assessment or Core based on the MRPP (pages 33-35). Type of monitoring conducted at sample locations depends on the rotation schedule outlined in the MRPP (Table 9, page 55); Core Monitoring locations rotate into Assessment Monitoring every third year.

A-Assessment Monitoring
C-Core Monitoring
MPM-Management Plan Monitoring
DPR-Constituent monitored as part of DPR grant monitoring (June 2010 through February 2011)

Water quality results from MPM are used to evaluate the effectiveness of Coalition outreach in priority subwatersheds and the effectiveness of management practices implemented by growers within those subwatersheds. Table 2 includes a comparison between 2010 and 2011 MPM results. Table 3 lists all MPM sites and monitoring results from 2011. The following four pesticides were the constituents with no exceedances during 2011 MPM: diazinon, diuron, disulfoton and simazine (Table 3). Samples collected for *Ceriodaphnia dubia* (21 samples collected) and *Selenastrum capricornutum* (41 samples collected) toxicity were toxic only once each in 2011. The *S. capricornutum* exceedance was at Grant Line Canal near Calpack Rd on January 11, 2011, and the *C. dubia* exceedance was at Duck Creek @ Hwy 4 on September 20, 2011. Of four samples collected for dieldrin, only one exceeded the Water Quality Trigger Limit (WQTL), which occurred from samples collected from Sand Creek @ Hwy 4 Bypass on May 24, 2011. Of the 29 management plan samples collected for copper, two exceeded the WQTL (7%) and of 47 chlorpyrifos MPM samples collected, seven exceeded the WQTL (15%). Sediment toxicity to *H. azteca* occurred in 10 out of 15 management plan samples collected (67%), a 33% decrease from 2010 where four out of four sediment samples were toxic (100%, Table 2)

Each high priority subwatershed is discussed in more detail including water quality exceedances, sourcing of exceedances, outreach and evaluation of management practices in relation to water quality in Appendix I.

Table 2. SJCDWQC Management Plan Monitoring results 2010 and 2011.

Management Plan Monitoring Results	2010			2011			2010 vs 2011
	Total MPM Exceedances	Total MPM Samples Collected	% Exceedances	Total MPM Exceedances	Total MPM Samples Collected	% Exceedances	% Difference
Copper	2	25	8%	2	29	7%	-1%
Chlorpyrifos	8	30	26%	7	47	15%	-11%
Diazinon	0	3	0%	0	8	0%	0%
Dieldrin	0	1	0%	1	4	25%	+25%
Disulfoton	NA	NA	NA	0	3	0%	NA
Diuron	0	4	0%	0	6	0%	0%
Simazine	0	2	0%	0	2	0%	0%
C. dubia (Survival)	0	6	0%	1	21	5%	+5%
H. azteca (Survival)	4	4	100%	10	15	67%	-33%
S. capricornutum (growth)	1	25	4%	1	41	2%	-2%
Chlorpyrifos for DPR	8	28	29%	1	8	13%	-16%
Diazinon for DPR	0	28	0%	0	8	0%	0%
H. azteca (Survival) DPR	2	4	50%	NA	NA	NA	NA

Grey shaded cells indicate DPR Grant Monitoring (may overlap with scheduled MPM)
DPR-includes results from additional Department of Pesticide Regulation monitoring from June 2010 through February 2011.
NA-Constituent not monitored for MPM during that year and 2010/2011 % difference could not be compared.
MPM-Management Plan Monitoring

Table 3. 2011 MPM results including a percentage of samples with exceedances.

"X" indicates that a sample was collected for a management plan constituent and no exceedance of a WQYL occurred. Red numbers indicate exceedances of a WQTL in a MPM sample. Dark grey shaded cells indicate no MPM was conducted on that date for that constituent. Light grey shaded cells indicate DPR grant monitoring (may or may not overlap with MPM).

Site Name	2011 MPM Year	Sample Date	*C. dubia* (% Control)	*S. capricornutum* (% Control)	Copper	Chlorpyrifos	Diazinon	Dieldrin	Disulfoton	Diuron	Simazine	Hyalella (% Control)	Chlorpyrifos for DPR	Diazinon for DPR
Duck Creek @ Hwy 4	Year 3	1/11/11											X	X
French Camp Slough @Airport Way	Year 1	1/11/11			X		X			X				
Grant Line Canal @ Clifton Court Rd	Year 2	1/11/11		X		X								
Grant line Canal near Calpack Rd	Year 2	1/11/11		53										
Littlejohns Creek @ Jack Tone Rd	Year 2	1/11/11											X	X
Lone Tree Creek @ Jack Tone Rd	Year 3	1/11/11		X	X	X	X			X			X	X
Sand Creek @ Hwy 4 Bypass	Year 0	1/11/11					X							
Terminous Tract Drain @ Hwy 12	Year 1	1/11/11		X										
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Year 3	1/11/11	X			0.020				X	X		0.020	X
Duck Creek @ Hwy 4	Year 3	2/8/11		X			X						X	X
French Camp Slough @Airport Way	Year 1	2/8/11	X	X		X	X			X				
Grant Line Canal @ Clifton Court Rd	Year 2	2/8/11				X								
Grant line Canal near Calpack Rd	Year 2	2/8/11		X										
Kellogg Creek along Hoffman Ln	Year 0	2/8/11	X		X	X								
Littlejohns Creek @ Jack Tone Rd	Year 2	2/8/11			X	X	X						X	X
Lone Tree Creek @ Jack Tone Rd	Year 3	2/8/11		X	X	X	X			X			X	X
Mokelumne River @ Bruella Rd	Year 1	2/8/11	X											
Terminous Tract Drain @ Hwy 12	Year 1	2/8/11		X										
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Year 3	2/8/11	X	X		X				X	X		X	X
French Camp Slough @Airport Way	Year 1	3/8/11	X									X		
Grant Line Canal @ Clifton Court Rd	Year 2	3/8/11				X						80		
Grant line Canal near Calpack Rd	Year 2	3/8/11	X			X						X		
Kellogg Creek along Hoffman Ln	Year 0	3/8/11	X									78		
Littlejohns Creek @ Jack Tone Rd	Year 2	3/8/11		X										
Lone Tree Creek @ Jack Tone Rd	Year 3	3/8/11		X								X		
Mokelumne River @ Bruella Rd	Year 1	3/8/11		X										
Sand Creek @ Hwy 4 Bypass	Year 0	3/8/11										29		
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Year 3	3/8/11		X								33		
Duck Creek @ Hwy 4	Year 3	4/12/11	X	X		X								
French Camp Slough @Airport Way	Year 1	4/12/11		X										
Grant line Canal near Calpack Rd	Year 2	4/12/11		X										
Kellogg Creek along Hoffman Ln	Year 0	4/12/11	X	X										
Littlejohns Creek @ Jack Tone Rd	Year 2	4/12/11		X		X								
Lone Tree Creek @ Jack Tone Rd	Year 3	4/12/11		X										
Mokelumne River @ Bruella Rd	Year 1	4/12/11		X										
Mormon Slough @ Jack Tone Rd	Year 0	4/12/11		X										

Site Name	2011 MPM Year	Sample Date	*C. dubia* (% Control)	*S. capricornutum* (% Control)	Copper	Chlorpyrifos	Diazinon	Dieldrin	Disulfoton	Diuron	Simazine	Hyalella (% Control)	Chlorpyrifos for DPR	Diazinon for DPR
Sand Creek @ Hwy 4 Bypass	Year 0	4/12/11		X										
Terminous Tract Drain @ Hwy 12	Year 1	4/12/11		X										
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Year 3	4/12/11			X									
Duck Creek @ Hwy 4	Year 3	5/24/11		X		X								
French Camp Slough @Airport Way	Year 1	5/24/11			X	X								
Grant Line Canal @ Clifton Court Rd	Year 2	5/24/11		X	X									
Grant line Canal near Calpack Rd	Year 2	5/24/11	X	X		X								
Kellogg Creek along Hoffman Ln	Year 0	5/24/11		X										
Littlejohns Creek @ Jack Tone Rd	Year 2	5/24/11			1.7 (1.03)									
Lone Tree Creek @ Jack Tone Rd	Year 3	5/24/11		X										
Mokelumne River @ Bruella Rd	Year 1	5/24/11		X										
Mormon Slough @ Jack Tone Rd	Year 0	5/24/11	X	X		X								
Sand Creek @ Hwy 4 Bypass	Year 0	5/24/11	X			X		0.027	X					
Terminous Tract Drain @ Hwy 12	Year 1	5/24/11		X										
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Year 3	5/24/11		X	11 (5.95)	X								
Duck Creek @ Hwy 4	Year 3	6/28/11				X								
French Camp Slough @Airport Way	Year 1	6/28/11			X									
Grant Line Canal @ Clifton Court Rd	Year 2	6/28/11			X									
Littlejohns Creek @ Jack Tone Rd	Year 2	6/28/11			X	X								
Mokelumne River @ Bruella Rd	Year 1	6/28/11			X									
Sand Creek @ Hwy 4 Bypass	Year 0	6/28/11	X			X		X	X					
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Year 3	6/28/11				X								
Duck Creek @ Hwy 4	Year 3	7/26/11	X			X								
French Camp Slough @Airport Way	Year 1	7/26/11			X	X		X						
Grant Line Canal @ Clifton Court Rd	Year 2	7/26/11			X									
Grant line Canal near Calpack Rd	Year 2	7/26/11		X		X								
Kellogg Creek along Hoffman Ln	Year 0	7/26/11			X									
Littlejohns Creek @ Jack Tone Rd	Year 2	7/26/11		X		X								
Lone Tree Creek @ Jack Tone Rd	Year 3	7/26/11			X	X								
Mokelumne River @ Bruella Rd	Year 1	7/26/11		X	X									
Mormon Slough @ Jack Tone Rd	Year 0	7/26/11		X		X								
Sand Creek @ Hwy 4 Bypass	Year 0	7/26/11	X				X							
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Year 3	7/26/11			X	0.028								
Duck Creek @ Hwy 4	Year 3	8/23/11				X								
French Camp Slough @Airport Way	Year 1	8/23/11			X	X								
Grant Line Canal @ Clifton Court Rd	Year 2	8/23/11			X									
Grant line Canal near Calpack Rd	Year 2	8/23/11	X			X								
Kellogg Creek along Hoffman Ln	Year 0	8/23/11		X										
Littlejohns Creek @ Jack Tone Rd	Year 2	8/23/11		X										
Lone Tree Creek @ Jack Tone Rd	Year 3	8/23/11			X	X								

Site Name	2011 MPM Year	Sample Date	*C. dubia* (% Control)	*S. capricornutum* (% Control)	Copper	Chlorpyrifos	Diazinon	Dieldrin	Disulfoton	Diuron	Simazine	Hyalella (% Control)	Chlorpyrifos for DPR	Diazinon for DPR
Mokelumne River @ Bruella Rd	Year 1	8/23/11		X	X									
Mormon Slough @ Jack Tone Rd	Year 0	8/23/11				X								
Sand Creek @ Hwy 4 Bypass	Year 0	8/23/11		X				X	X					
Terminous Tract Drain @ Hwy 12	Year 1	8/23/11				X								
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Year 3	8/23/11			X	X								
Duck Creek @ Hwy 4	Year 3	9/20/11	35			0.12								
French Camp Slough @Airport Way	Year 1	9/20/11*				X						87		
Grant Line Canal @ Clifton Court Rd	Year 2	9/20/11*			X	X						80		
Grant line Canal near Calpack Rd	Year 2	9/20/11*										87		
Kellogg Creek along Hoffman Ln	Year 0	9/20/11*										62		
Littlejohns Creek @ Jack Tone Rd	Year 2	9/20/11			X									
Lone Tree Creek @ Jack Tone Rd	Year 3	9/20/11*			X							X		
Mokelumne River @ Bruella Rd	Year 1	9/20/11*	X											
Mormon Slough @ Jack Tone Rd	Year 0	9/20/11	X			0.11								
Sand Creek @ Hwy 4 Bypass	Year 0	9/20/11*										80		
Terminous tract Drain @ Hwy 12	Year 1	9/20/11*				0.082						X		
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Year 3	9/20/11*	X		X	X						46		
French Camp Slough @Airport Way	Year 1	10/6/11				0.097								
Littlejohns Creek @ Jack Tone Rd	Year 2	11/15/11				0.022								
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Year 3	11/15/11				X								
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Year 3	12/13/11				X*								
Total MPM Exceedances			1	1	2	7	0	1	0	0	0	10	1	0
Total MPM Samples Collected			21	41	29	47	8	4	3	6	2	15	8	8
% Exceedances			5%	2%	7%	15%	0%	25%	0%	0%	0%	67%	13%	0%

DPR-Constituent monitored as part of DPR grant monitoring (June 2010 through February 2011)
MPM-Management Plan Monitoring
WQTL – Water Quality Trigger Limit
X*-Site was dry during the monitoring event.
Years 1, 2 and 3 indicate the year of MPM the subwatershed is in.
*-Sediment laboratory controls failed and samples were re-collected for analysis on 10/14/11.

2004 - 2011 EXCEEDANCES

An important aspect of the SJCDWQC Management Plan is to provide yearly updates of exceedances based on the most recent WQTLs. Table 4 provides a tally of exceedances for sites monitored from 2004 through 2011. Sites not included in this tally, as described in the SJCDWQC Management Plan are Marsh Creek and Potato Slough, Stanislaus River Drain @ South Airport Way and Kellogg Creek @ Hwy 4.

Sites monitored as upstream MPM sites in 2008 are not included in Table 4 or 5. These sites and associated exceedances were included in the MPUR submitted on April 1, 2009 and are referenced in the site subwatershed section of this MPUR (Appendix I).

Table 6 includes a tally of exceedances that occurred since the last update (April 1, 2011) and includes monitoring results from 2011. In both tables, cells with blue highlights indicate exceedances in subwatersheds that are currently under the SJCDWQC Management Plan. In Table 5, green highlights indicate sites/constituents that have been included in the SJCDWQC Management Plan due to exceedances in 2011.

Table 4. SJCDWQC exceedance tally based on all results through December 2011.

Sites are listed alphabetically by site name and constituents are listed alphabetically within each of the following groups: field parameters (F), inorganics (I), bacteria (B), metals (M), pesticides (P) and toxicity (T). Constituents under a management plan are highlighted. The tally only includes field duplicate exceedances if the environmental sample did not also have an exceedance.

	F			I				B	M								P																					T			
Site Name	Oxygen, Dissolved	pH	Specific Conductivity	Dissolved Solids	Ammonia	Nitrate as N	Nitrate + Nitrite as N	*E. coli*	Arsenic	Boron	Copper Dissolved†	Copper Total†	Lead	Molybdenum	Nickel	Azinphos methyl	Carbofuran	Chlorpyrifos	Cypermethrin	DDD (p,p')	DDE (p,p')	DDT (p,p')	Diazinon	Dieldrin	Dimethoate	Disulfoton	Diuron	Endrin	HCH, delta	Linuron	Malathion	Methidathion	Methomyl	Methyl parathion	Paraquat dichloride	Permethirn, total	Thiobencarb	Simazine	*C. dubia*	*P. promelas*	*S. capricornutum*	*H. azteca*
Bear Creek @ North Alpine Rd	8	2						2										3													3											
Drain @ Woodbridge Rd	16		16	15				2	13									1																							1
Duck Creek @ Hwy 4	34	3						6										18					1								1								7		3	1
French Camp Slough @ Airport Way	15	6						31				12	2			1	1	12					2	2	1		2					1				2			2		2	5
Grant Line Canal @ Clifton Court Rd	31	7	28	16	1			19	10			6	3		1		1	6			2	1			1														1		3	5
Grant Line Canal near Calpack Rd	40		54	25	1			19	4									4			1					1	1			1	1							3		11	8
Kellogg Creek @ Hwy 4	3	1	8	5				5										1[3]																		1			1	2[3]	1	3
Kellogg Creek along Hoffman Ln	8	8	4	3		1		4				3						0[3]			3	2																2	0[3]	4	6
Littlejohns Creek @ Jack Tone Rd	20	2						6			2	5					1	9					1																	1	5	2*
Lone Tree Creek @ Jack Tone Rd	18	5		1	4			26				7	1[1]					9	1		1	1	2				3									2	1	1	2	7	2
Mokelumne River @ Bruella Rd	5	9						4				3										1[2]																	5		10	
Mormon Slough @ Jack Tone Rd	11	6						1										8																1			1		2		4	1
Roberts Island Drain @ Holt Rd	36	1	59	45				12	1									4			3						2											2		5	2
Roberts Island Drain along House Rd	23	3	22	14				7	1									2	1		2	1																2*		4	4
Sand Creek @ Hwy 4 Bypass	31		45	19				17										2		1	5	3	2	5		3		1				1					3	1	3	12
South Webb Tract Drain	17	1	5	5	1			5	12	1				1																				1				1			
Terminous Tract Drain @ Hwy 12	45	1	40	31				12	7									3				1									1									1	4	1
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	6	1	3	1				10			2	5	2				1	18			1						3				1					3	2	5		5	7
Walthall Slough @ Woodward Ave	25		10	7	1		3	6										2			1								3											1	2
Grand Total	**392**	**56**	**294**	**187**	**8**	**1**	**3**	**194**	**48**	**1**	**4**	**41**	**8**	**1**	**1**	**1**	**4**	**102**	**2**	**1**	**19**	**10**	**8**	**7**	**2**	**4**	**11**	**1**	**3**	**1**	**6**	**2**	**1**	**1**	**1**	**1**	**7**	**4**	**37**	**7**	**72**	**62**

[1] A lead exceedance at Lone Tree Creek @ Jack Tone Rd occurred on 2/11/2007; however it was previously overlooked and was not reported in this table in previous reports.

[2] Field blank exceedance (DDT on 6/20/2006) was incorrectly reported in previous MPURs has been excluded from table; the exceedance was not representative of water quality in Mokelumne River.

[3] Exceedances from the Kellogg Creek @ Hwy 4 site count toward the management plan for Kellogg Creek along Hoffman Ln (site location was moved in May 2006 due to urban influences).

*Not prioritized for MPM; both toxic samples were from the same sampling event (sample and resample to test for persistence).

† Exceedances of the copper WQTL determined by either total or dissolved copper are evaluated under the same copper management plan.

Table 5. SJCDWQC exceedance tally based 2011 sampling events.

All sites are listed that have had at least one exceedance in 2011. Sites are listed alphabetically by site name and constituents are listed alphabetically within each of the following groups: field parameters (F), inorganics (I), bacteria (B), metals (M), pesticides (P) and toxicity (T). Green highlighted cells refer to sites/constituents that require a management plan due to 2011 exceedances; blue highlights refer to sites/constituents already in a management plan. The tally only includes field duplicate exceedances if the environmental sample did not also have an exceedance.

		F			I		B	M		P			T			
Zone	Site Name	Oxygen, Dissolved	pH	Specific Conductivity	Dissolved Solids	Nitrate + Nitrite as N	*E. coli*	Arsenic	Copper Dissolved†	Chlorpyrifos	Dieldrin	Malathion	*C. dubia*	*P. promelas*	*S. capricornutum*	*H. azteca*
1	Bear Creek @ North Alpine Rd	4	2				1			3		3				
2	Duck Creek @ Hwy 4	4								1			1			
2	French Camp Slough @ Airport Way		3				5			2						1
4	Grant Line Canal @ Clifton Court Rd	4		6												2
4	Grant Line Canal near Calpack Rd	2		7											1	1
4	Kellogg Creek along Hoffman Ln		4	1												2
2	Littlejohns Creek @ Jack Tone Rd	3	1						1	1						
2	Lone Tree Creek @ Jack Tone Rd		2													
1	Mokelumne River @ Bruella Rd		3				2									
2	Mormon Slough @ Jack Tone Rd		2							1						
4	Roberts Island Drain @ Holt Rd	4	1	10	8		3	1		2						
6	Sand Creek @ Hwy 4 Bypass	6		9							1					2
3	Terminous Tract Drain @ Hwy 12	9		8	7		2			1						
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd			1					1	2						2
5	Walthall Slough @ Woodward Ave	8		4	3	2	1			2						
	Grand Total	**44**	**18**	**46**	**18**	**2**	**14**	**1**	**2**	**15**	**1**	**3**	**1**		**1**	**10**

† Exceedances of the copper WQTL determined by either total or dissolved copper are evaluated under the same copper management plan.

2011 NEW SITE/CONSTITUENTS REQUIRING MANAGEMENT PLANS

New sites that require a focused management plan approach were added to the priority list (Table 6). Source identification, outreach and evaluation of management practices will be addressed at all new site subwatersheds that have been added to the focused management plan list during their years of priority as specified in Table 6.

As a result of 2011 monitoring, several new site/constituent specific management plans are required (see green highlights in Table 6). Below is a list of constituents with 2011 exceedances that triggered a new site/constituent specific management plan:

- pH
  - Bear Creek @ North Alpine Rd
  - Littlejohns Creek @ Jack Tone Rd
- Nitrate + Nitrite as N
  - Walthall Slough @ Woodward Ave
- *E. coli*
  - Bear Creek @ North Alpine Rd
- Chlorpyrifos
  - Bear Creek @ North Alpine Rd
  - Walthall Slough @ Woodward Ave
- Malathion
  - Bear Creek @ North Alpine Rd

MANAGEMENT PLAN PROCESS

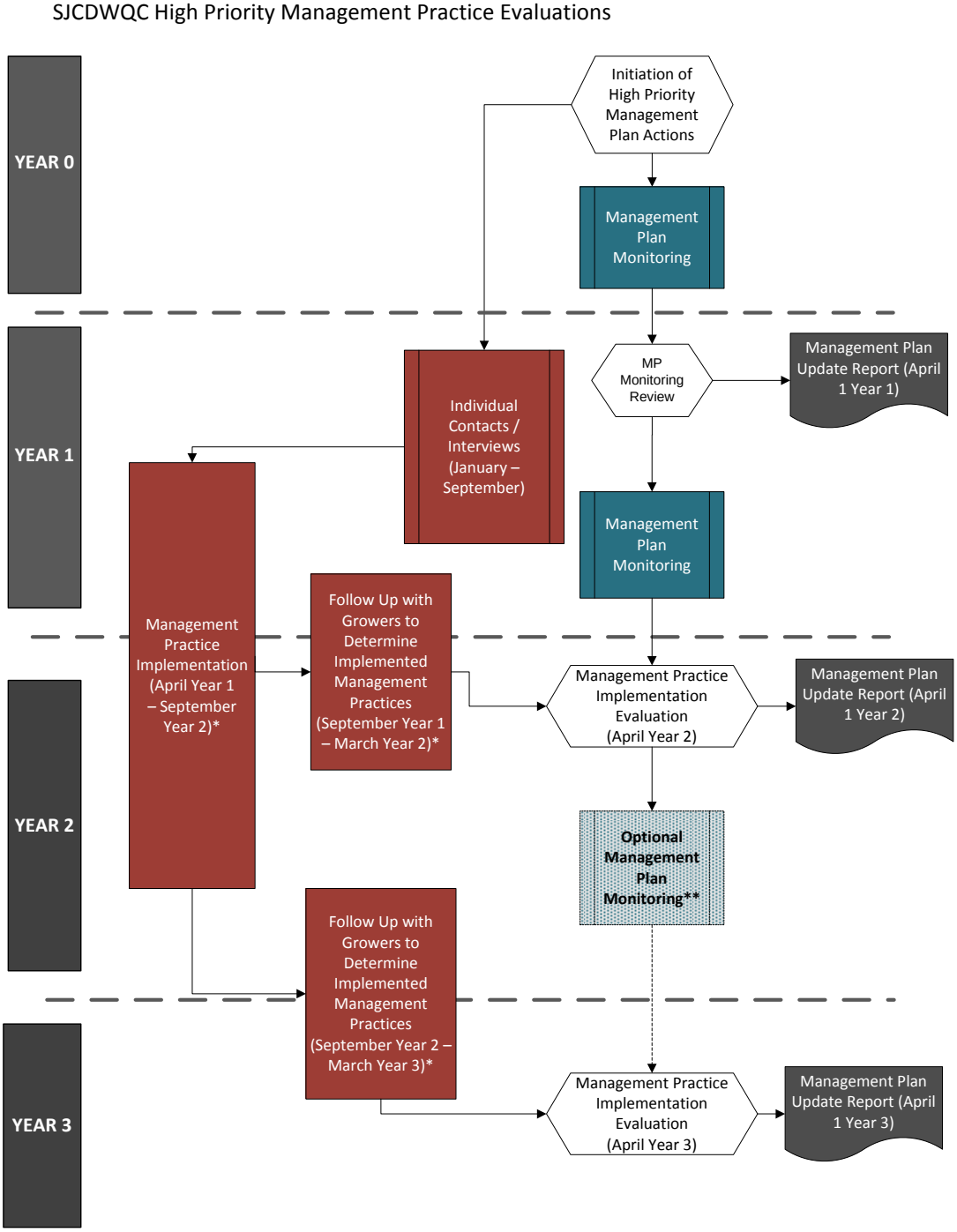
The SJCDWQC Management Plan process was first outlined in the SJCDWQC Management Plan submitted on September 30, 2008. It was updated in the 2010 MPUR to reflect the current monitoring strategy outlined in the SJCDWQC MRPP (pages 32-34) of rotating Core and Assessment Monitoring locations. The Coalition has focused its efforts on documenting changes in management practices and performing outreach at both an individual and grower group level.

MANAGEMENT PLAN MONITORING STRATEGY

The Coalition developed an updated flow chart for its MPM strategy (Figure 1). Sites are rotated to high priority based on a schedule approved by the Regional Board (Table 6). The strategy is updated to include MPM during months of past exceedances for high priority subwatersheds during Year 0, Year 1, and Year 2. Year 0 refers to the year before the subwatershed becomes high priority and allows the Coalition to have recent water quality data when contacting growers in the subwatershed.

If there are two years with no exceedances of high priority constituents (either in Year 0 and Year 1 or Year 1 and Year 2), that site/constituent is petitioned to be removed from an active management plan. Monitoring will occur for those constituents when the site is rotated back into Assessment Monitoring. Management Plan Monitoring may continue beyond two years if the Coalition determines that an extra year of monitoring is necessary to evaluate improvements in water quality and/or the effectiveness of newly implemented management practices. Growers in the first set of high priority subwatersheds were contacted late in the first year and therefore implementation of some management practices may have been delayed. Further MPM and outreach is required to more accurately evaluate water quality improvements.

Figure 1. SJCDWQC high priority subwatershed Management Plan Monitoring strategy and management practice evaluation.



*Structural management practices may take longer to implement due to cost and time required to install; such cases will be reported to the Regional Board and followed up with individually.
**The Coalition may choose to continue conducting Management Plan Monitoring during the third year if water quality problems persist; if no exceedances occur during Year 0 and Year 1 MP Monitoring, the Coalition will not continue monitoring during Year 2.

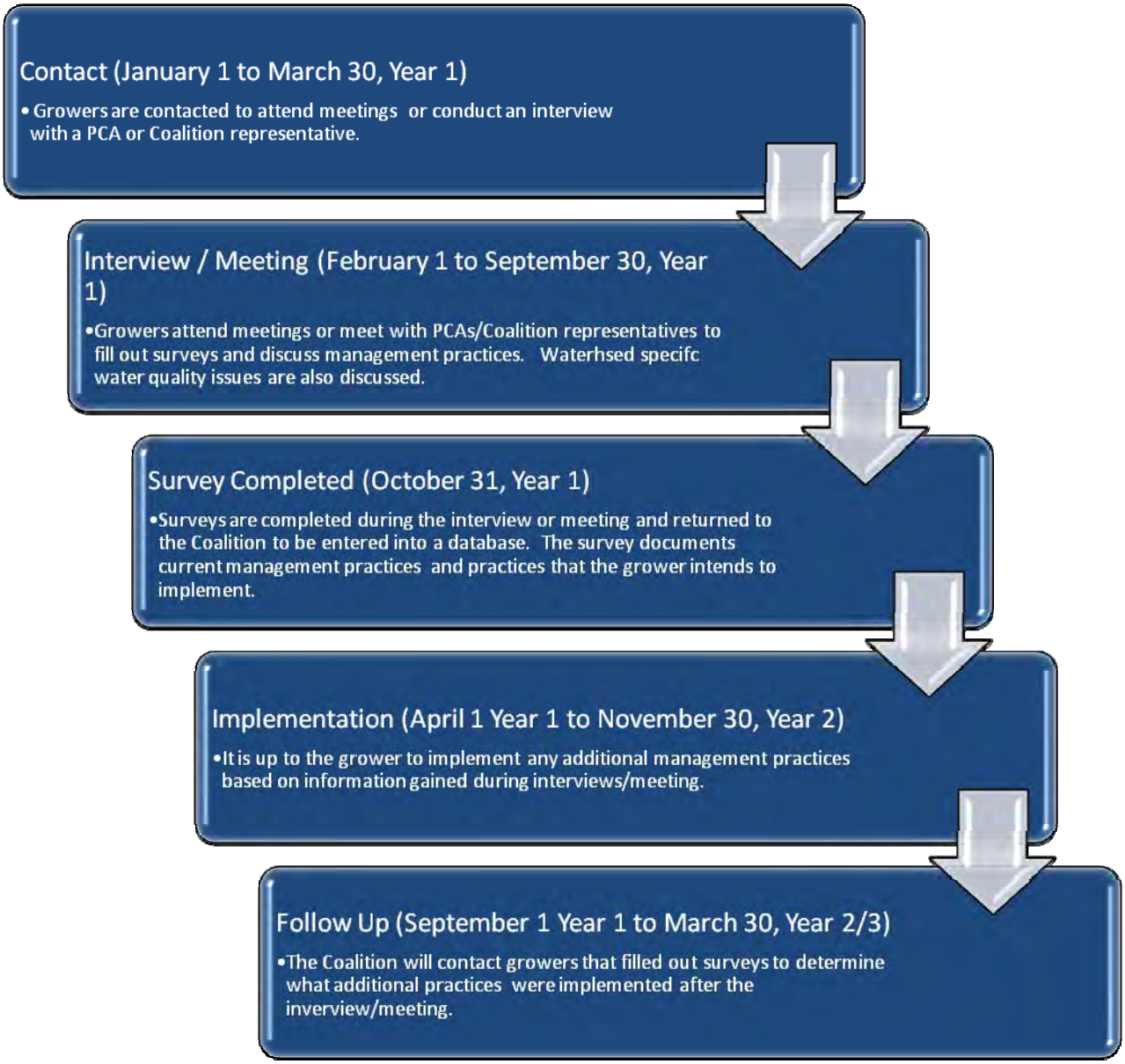
MANAGEMENT PRACTICE TRACKING STRATEGY

The schedule outlined in Figure 2 lists a general timeline of actions in Years 1, 2 and 3 of the flow chart represented in Figure 1. When a site becomes a high priority site subwatershed, the Coalition contacts individuals within the subwatershed who have the potential to directly drain to the creek and have applied constituents of concern. Contacts occur between January 1 and March 30 of Year 1 in order to schedule meetings between February 1 and September 30. Meetings are used to inform growers of current water quality impairments and potential management practices that can be implemented to reduce impairments of water quality due to agricultural inputs.

At the meetings, growers are requested to complete surveys and return them to Coalition representatives (either at the meeting or by mail). The Coalition's goal is that all surveys will be completed by October 31 of Year 1. Surveys document current management practices and are used to identify additional management practices that the member intends to implement in Year 1 and/or Year 2. Implementation is anticipated to occur between April of Year 1 and November of Year 2. It is difficult to predict when implementation will occur since structural management practices may take multiple years to fund and construct.

The Coalition conducts follow up surveys with growers between September of Year 1 and March of Year 2. Follow up may be extended to Year 3 depending on information obtained from the grower on when they plan to implement practices; in some cases a third year may be necessary for funds to be available for structural improvements. Follow up surveys document the additional practices that the grower planned to implement. The returned surveys document whether or not growers implemented those practices in Year 1 and if not, whether they plan to implement the practices in Year 2. If the grower indicates that they do not intend to implement additional practices despite their previous declaration that they would, they are asked why (e.g. they no longer farm that parcel, no available funds).

Figure 2. Schedule for Coalition management plan strategy activities to document management practices for high priority subwatersheds.



PRIORITIZATION OF CONSTITUENTS WITH EXCEEDANCES

The SJCDWQC developed a prioritization process (Figure 3) which allows the Coalition to focus on constituents of the greatest concern. The prioritization process was developed in collaboration with the Regional Board and allows the Coalition to focus on constituents where sourcing is possible (i.e. pesticides) and for which management practices are available. Following the process outlined in Figure 3, a priority level is assigned to all constituents with two or more past exceedances in a site subwatershed. Priority levels assigned to a constituent determine the level of activity for sourcing, outreach, and evaluation.

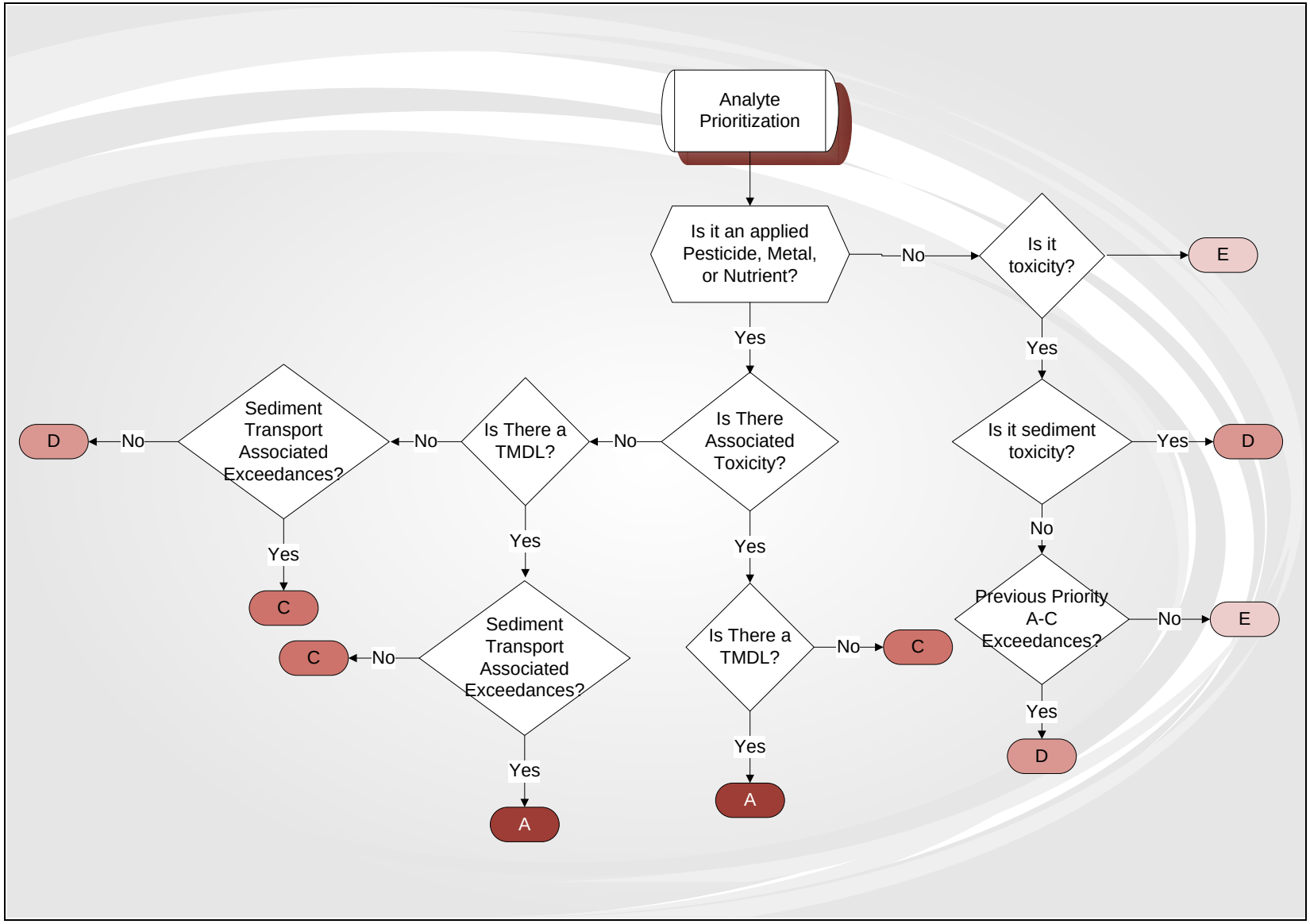
Source analysis for pesticides is conducted by utilizing Pesticide Use Reports (PUR). All PUR data obtained directly from the County Agricultural Commissioners are considered preliminary and may contain some level of inaccuracy until they have been finalized and made available through California Pesticide Information Portal (CalPIP). The most recent available CalPIP data are through December 2010. Preliminary PUR data associated with 2011 exceedances that were available for review include data from Contra Costa and San Joaquin Counties (January through May), and Stanislaus County (January through November). Any outstanding PUR data that become available after this report is submitted will be included in an addendum to the Coalition's AMR to be submitted on June 1, 2012.

Source analysis is also conducted by analyzing any relevant MPM data (may include upstream and/or increased frequency of monitoring conducted in previous years). Monitoring is conducted for priority constituents A through D; priority E constituents do not have MPM except for field parameters which are collected each time monitoring occurs.

The Coalition continues to provide information regarding management practices and water quality exceedances to growers during annual meetings held by the County Agricultural Commissioners, and site subwatershed meetings as needed. Outreach occurs for all constituents; however, growers using high priority constituents (i.e. TMDL pesticides such as chlorpyrifos) are targeted for individual contacts.

The Coalition evaluates information about management practices obtained from individual surveys including follow up surveys which document newly implemented practices. The Coalition expects that as a result of individual contacts and newly implemented practices, downstream water quality will improve. However, it is possible that due to discharges by non members, there may continue to be downstream water quality impairments. Therefore evaluation of management practices involves both an assessment of water quality and the degree of implementation of management practices at the subwatershed level.

Figure 3. SJCDWQC constituent prioritization process.



MANAGEMENT PLAN DEVELOPMENT TIMELINES

The Coalition developed a schedule (Table 6) establishing when sites become high priority and undergo a focused management plan approach as described in the previous section. This schedule was submitted as an addendum to the SJCDWQC Management Plan and was approved on January 23, 2009 (Table C); a request to extend the dates in the Coalition's prioritization schedule by one year was submitted on June 5, 2009. The schedule is evaluated and updated in each yearly MPUR with 1) new sites requiring a management plan, and 2) changes involving focused outreach. Based on the Management Plan process, any new site that requires a management plan is added to the schedule. Changes such as time line extensions, removal of sites and/or changing the year of prioritization must be approved by the Regional Board's Executive Officer.

Table 6 provides an updated schedule that includes the approved changes. There are currently 16 site subwatersheds included in the SJCDWQC Management Plan that are scheduled for high priority status between 2008 and 2016.

As a result of 2011 monitoring, several new site/constituent specific management plans are required; however, no new sites have been added to the priority schedule. Sites that required management plans due to 2011 exceedances were are already on the priority schedule (Table 6). There are currently 16 site subwatersheds included in the SJCDWQC Management Plan that will become high priority sites between 2008 and 2016 (Table 6).

Table 6. Schedule for addressing each site subwatershed with a detailed focused Management Plan approach.

SITE SUBWATERSHED NAME	YEAR FOR FOCUSED APPROACH
Duck Creek @ Hwy 4	2008-2010
Lone Tree Creek @ Jack Tone Rd	2008-2010
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	2008-2010
Grant Line Canal @ Clifton Court Rd	2010-2012
Grant Line Canal near Calpack Rd	2010-2012
Littlejohns Creek @ Jack Tone Rd	2010-2012
Terminous Tract Drain @ Hwy 12	2011-2013
French Camp Slough @ Airport Way	2011-2013
Mokelumne River @ Bruella Rd	2011-2013
Sand Creek @ Hwy 4 Bypass	2012-2014
Kellogg Creek along Hoffman Ln	2012-2014
Mormon Slough @ Jack Tone Rd	2012-2014
Bear Creek @ North Alpine Rd[1]	2013-2015
Roberts Island @ Whiskey Slough Pump[2]	2013-2015
Walthall Slough @ Woodward Ave	2013-2015
Drain @ Woodbridge Rd	2014-2016
RE-EVALUATE ALL SITE SUBWATERSHEDS AND REVISE SCHEDULE	ANNUALLY

[1]Site added to the list following 2011 exceedances.

[2]Roberts Island @ Whiskey Slough Pump replaced two subwatersheds (Roberts Island Drain @ Holt Rd and Roberts Island Drain along House Rd) previously scheduled to become high priority in 2013-2015 (approved January 12, 2012). All management plan constituents detected at the two previous locations undergo MPM at Roberts Island @ Whiskey Slough Pump.

PRIORITY SITE MANAGEMENT

MANAGEMENT OBJECTIVES

The Coalition prioritizes constituents and site subwatersheds to allow for focused source identification, outreach and evaluation of management practices. Prioritization of subwatersheds currently is based on the number, frequency and magnitude of chlorpyrifos and diazinon exceedances.

The objective of the prioritization process is to identify watersheds where exceedances are common and management practices can be implemented to decrease discharges that may contribute to downstream impairments. Although the Coalition is focusing on chlorpyrifos and diazinon exceedances and associated applications, management practices implemented to reduce the runoff of these constituents will also reduce the runoff of other pesticides, nutrients, salts and metals.

The Coalition monitors for Priority A- D constituents the year before a site becomes a high priority subwatershed (in 2011, Year 0 monitoring began in the fourth priority subwatersheds, Figure 1). The purpose of monitoring is to evaluate improvements in water quality and the effectiveness of management practices. A site subwatershed analysis has been included in Appendix I for all high priority subwatersheds.

2012 MANAGEMENT PLAN MONITORING SCHEDULE

In 2012, the SJCDWQC will conduct MPM at the following sites. Years 0, 1, 2, 3 and 4 reflect the number of years that the site will have been monitored as of 2012 (i.e. Year 4 indicates that the site is in its fourth year of MPM).

Year 4: First Priority (2008 – 2010)
- Duck Creek @ Hwy 4
- Lone Tree Creek @ Jack Tone Rd
- Unnamed Drain to Lone Tree Creek

Year 3: Second Priority (2010 – 2012)
- Grant Line Canal near Calpack Rd
- Grant Line Canal @ Clifton Ct
- Littlejohns Creek @ Jack Tone Rd

Year 2: Third Priority (2011 – 2013)
- French Camp Slough @ Airport Way
- Mokelumne River @ Bruella Rd
- Terminous Tract @ Hwy 12

Year 1: Fourth Priority (2012 – 2014)
- Kellogg Creek along Hoffman Ln
- Mormon Slough @ Jack Tone Rd
- Sand Creek @ Hwy 4 Bypass

Year 0: Fifth Priority (2013 – 2015)
- Bear Creek @ North Alpine Rd
- Roberts Island @ Whiskey Slough Pump
- Walthall Slough @ Woodward Ave

The first priority subwatersheds are scheduled for continued monitoring in the fourth year (Year 4) to assess water quality due to initial delays in management practice evaluation/ implementation. After two consecutive years without exceedances the Coalition will petition to have the constituents removed from that site's active management plan. The Coalition has petitioned for the removal of 13 constituents from seven high priority subwatersheds (letter mailed on January 6, 2012). Management Plan Monitoring will continue at high priority subwatershed sites until the Regional Board Executive Officer approves the removal of the site/constituent from the SJCDWQC Management Plan.

Table 7 includes all sites that are scheduled for MPM for priority constituents during months of past exceedances in 2012.

Table 7. 2012 Management Plan Monitoring schedule.

Site Name	2012 MPM Year	Month	Copper	Chlorpyrifos	Diazinon	Dieldrin	Disulfoton	Diuron	Simazine	Malathion	*C. dubia*	*S. capricornutum*	*H. azteca**
Bear Creek @ North Alpine Rd	Year 0	January		X						X			
French Camp Slough @ Airport Way	Year 2	January			X			X					
Grant Line Canal @ Clifton Court Rd	Year 3	January		X								X	
Grant Line Canal near Calpack Rd	Year 3	January										X	
Lone Tree Creek @ Jack Tone Rd	Year 4	January	X	X	X			X				X	
Roberts Island @ Whiskey Slough Rd	Year 0	January		X				X				X	
Sand Creek @ Hwy 4 Bypass	Year 1	January			X								
Terminous Tract Drain @ Hwy 12	Year 2	January										X	
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Year 4	January		X				X	X		X		
Duck Creek @ Hwy 4	Year 4	February			X							X	
French Camp Slough @ Airport Way	Year 2	February	X	X	X			X			X	X	
Grant Line Canal @ Clifton Court Rd	Year 3	February		X									
Grant Line Canal near Calpack Rd	Year 3	February										X	
Kellogg Creek along Hoffman Ln	Year 1	February	X	X							X		
Littlejohns Creek @ Jack Tone Rd	Year 3	February	X	X	X								
Lone Tree Creek @ Jack Tone Rd	Year 4	February	X	X	X			X				X	
Mokelumne River @ Bruella Rd	Year 2	February									X		
Roberts Island @ Whiskey Slough Rd	Year 0	February		X									
Terminous Tract Drain @ Hwy 12	Year 2	February										X	
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Year 4	February		X				X	X		X	X	
French Camp Slough @ Airport Way	Year 2	March									X		X
Grant Line Canal @ Clifton Court Rd	Year 3	March		X									X
Grant Line Canal near Calpack Rd	Year 3	March		X							X		X
Kellogg Creek along Hoffman Ln	Year 1	March									X		X
Littlejohns Creek @ Jack Tone Rd	Year 3	March										X	
Lone Tree Creek @ Jack Tone Rd	Year 4	March										X	X
Mokelumne River @ Bruella Rd	Year 2	March									X	X	
Roberts Island @ Whiskey Slough Rd	Year 0	March									X		X
Sand Creek @ Hwy 4 Bypass	Year 1	March											X
Terminous Tract Drain @ Hwy 12	Year 2	March											X
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Year 4	March										X	X
Walthall Slough @ Woodward Ave	Year 0	March											X
Duck Creek @ Hwy 4	Year 4	April		X							X	X	
French Camp Slough @ Airport Way	Year 2	April		X								X	
Grant Line Canal near Calpack Rd	Year 3	April										X	
Kellogg Creek along Hoffman Ln	Year 1	April									X	X	
Littlejohns Creek @ Jack Tone Rd	Year 3	April		X								X	

Site Name	2012 MPM Year	Month	Copper	Chlorpyrifos	Diazinon	Dieldrin	Disulfoton	Diuron	Simazine	Malathion	*C. dubia*	*S. capricornutum*	*H. azteca**
Lone Tree Creek @ Jack Tone Rd	Year 4	April										X	
Mokelumne River @ Bruella Rd	Year 2	April										X	
Mormon Slough @ Jack Tone Rd	Year 1	April										X	
Roberts Island @ Whiskey Slough Rd	Year 0	April										X	
Sand Creek @ Hwy 4 Bypass	Year 1	April										X	
Terminous Tract Drain @ Hwy 12	Year 2	April										X	
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Year 4	April	X										
Bear Creek @ North Alpine Rd	Year 0	May								X			
Duck Creek @ Hwy 4	Year 4	May		X								X	
French Camp Slough @ Airport Way	Year 2	May	X	X									
Grant Line Canal @ Clifton Court Rd	Year 3	May	X									X	
Grant Line Canal near Calpack Rd	Year 3	May		X							X	X	
Kellogg Creek along Hoffman Ln	Year 1	May										X	
Littlejohns Creek @ Jack Tone Rd	Year 3	May	X										
Lone Tree Creek @ Jack Tone Rd	Year 4	May										X	
Mokelumne River @ Bruella Rd	Year 2	May										X	
Mormon Slough @ Jack Tone Rd	Year 1	May		X							X	X	
Roberts Island @ Whiskey Slough Rd	Year 0	May										X	
Sand Creek @ Hwy 4 Bypass	Year 1	May		X		X	X				X		
Terminous Tract Drain @ Hwy 12	Year 2	May										X	
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Year 4	May	X	X								X	
Duck Creek @ Hwy 4	Year 4	June		X									
French Camp Slough @ Airport Way	Year 2	June	X										
Grant Line Canal @ Clifton Court Rd	Year 3	June	X										
Littlejohns Creek @ Jack Tone Rd	Year 3	June	X	X									
Mokelumne River @ Bruella Rd	Year 2	June	X								X		
Sand Creek @ Hwy 4 Bypass	Year 1	June		X		X	X				X		
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Year 4	June		X									
Duck Creek @ Hwy 4	Year 4	July		X							X		
French Camp Slough @ Airport Way	Year 2	July	X	X		X							
Grant Line Canal @ Clifton Court Rd	Year 3	July	X										
Grant Line Canal near Calpack Rd	Year 3	July		X								X	
Kellogg Creek along Hoffman Ln	Year 1	July	X										
Littlejohns Creek @ Jack Tone Rd	Year 3	July		X								X	
Lone Tree Creek @ Jack Tone Rd	Year 4	July	X	X									
Mokelumne River @ Bruella Rd	Year 2	July	X									X	
Mormon Slough @ Jack Tone Rd	Year 1	July		X								X	
Roberts Island @ Whiskey Slough Rd	Year 0	July						X			X	X	
Sand Creek @ Hwy 4 Bypass	Year 1	July			X						X		
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Year 4	July	X	X									
Duck Creek @ Hwy 4	Year 4	August		X									
French Camp Slough @ Airport Way	Year 2	August	X	X									
Grant Line Canal @ Clifton Court Rd	Year 3	August	X										
Grant Line Canal near Calpack Rd	Year 3	August		X							X		
Kellogg Creek along Hoffman Ln	Year 1	August										X	
Littlejohns Creek @ Jack Tone Rd	Year 3	August										X	
Lone Tree Creek @ Jack Tone Rd	Year 4	August	X	X									
Mokelumne River @ Bruella Rd	Year 2	August	X									X	
Mormon Slough @ Jack Tone Rd	Year 1	August		X									
Roberts Island @ Whiskey Slough Rd	Year 0	August		X									
Sand Creek @ Hwy 4 Bypass	Year 1	August				X	X					X	
Terminous Tract Drain @ Hwy 12	Year 2	August		X									
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Year 4	August	X	X									
Bear Creek @ North Alpine Rd	Year 0	September		X						X			

Site Name	2012 MPM Year	Month	Copper	Chlorpyrifos	Diazinon	Dieldrin	Disulfoton	Diuron	Simazine	Malathion	*C. dubia*	*S. capricornutum*	*H. azteca**
Duck Creek @ Hwy 4	Year 4	September		X							X		
French Camp Slough @ Airport Way	Year 2	September		X									X
Grant Line Canal @ Clifton Court Rd	Year 3	September	X	X									X
Grant Line Canal near Calpack Rd	Year 3	September											X
Kellogg Creek along Hoffman Ln	Year 1	September											X
Littlejohns Creek @ Jack Tone Rd	Year 3	September	X										
Lone Tree Creek @ Jack Tone Rd	Year 4	September	X										X
Mokelumne River @ Bruella Rd	Year 2	September									X		
Mormon Slough @ Jack Tone Rd	Year 1	September		X							X		
Roberts Island @ Whiskey Slough Rd	Year 0	September		X									X
Sand Creek @ Hwy 4 Bypass	Year 1	September											X
Terminous Tract Drain @ Hwy 12	Year 2	September		X									X
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Year 4	September	X	X							X		X
Walthall Slough @ Woodward Ave	Year 0	September		X									X
Bear Creek @ North Alpine Rd	Year 0	October		X									
French Camp Slough @ Airport Way	Year 2	October		X									
Walthall Slough @ Woodward Ave	Year 0	October		X									
Littlejohns Creek @ Jack Tone Rd	Year 3	November		X									
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Year 4	November		X									
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Year 4	December		X									

"X" indicates when a sample was collected for a particular constituent.

*Terminous Tract Drain @ Hwy 12 will have sediment MPM conducted in 2012 due to upstream sediment toxicity that occurred at the upstream sites of Delta Drain-Terminous Tract off Glasscock Rd and Delta Drain- Terminous Tract off Guard Rd in 2005-2006.

PERFORMANCE GOALS AND SCHEDULES

The Coalition Strategic Plan is outlined in Table 18 of the original Management Plan (approved on January 23, 2009) and is designed to meet the following management goal:

"To continue to monitor and analyze the water and sediment quality of SJCDWQC site subwatersheds and to facilitate the implementation of management practices by providing outreach and support to growers in order to effectively enhance water quality in the Coalition region."

The Coalition developed High Priority Site Subwatershed Performance Goals (hereafter referred to as Performance Goals) for its first four sets of high priority site subwatersheds: first priority subwatersheds (2008-2010), second priority subwatersheds (2010- 2012), third priority subwatersheds (2011-2013) and fourth priority subwatersheds (2012-2014). Performance goals are submitted for approval each time a new set of subwatersheds rotates into high priority status. Performance goals are built on the following actions essential to the Management Plan strategy:

1. Determine number/type of management practices currently in place, based on (Assessor Parcel Number) APN associated with baseline survey responses
2. Grower Group Contacts / Individual Contacts
3. Implementation of new management practices
4. Assess number/type of new management practices implemented
5. Evaluate effectiveness of new management practices

Performance Goals were approved by the Regional Board as amendments to the SJCDWQC Management Plan on December 29, 2009 (first priority subwatersheds), December 29, 2009 (second priority subwatersheds), January 10, 2011 (third priority subwatersheds) and November 14, 2011 (fourth priority subwatersheds). The following sections describe the Coalition actions to meet the approved Performance Goals and the status of each of the Performance Goals and associate measure/outputs.

First Priority Subwatersheds (2008 – 2010)

The amended Performance Goals for the first priority subwatersheds (amendments are discussed in detail in the schedule extension request submitted on August 3, 2009 and approved on December 29, 2009) are presented in Table 8. The updated management practices survey, outreach, implementation and evaluation tracking schedule is included in Table 9.

Performance Goal 1: Conduct grower group meetings.

As described in the 2010 MPUR, the Coalition conducted grower group meetings in November 2008 and March 2009 at which time targeted members filled out surveys and Coalition representatives discussed water quality impairments and management practices that could be implemented.

Performance Goal 2: Individually contact members on adjacent properties to waterways where discharges have been identified during winter 2008/2009.

As reported in the 2010 MPUR, the Coalition successfully identified and contacted targeted members in 2008 and 2009 to attend grower group meetings, document current management practices and indicate what additional management practices may be implemented in 2009 and 2010.

Performance Goal 3: Establish current practices (beyond established baseline practices) by April 2009 on adjacent properties to waterways or where discharges are identified.

Performance Goal 3 was completed by the required date as reported in the 2010 MPUR (Table 8, page 23). The actions taken by the Coalition to meet this performance goal between November 2008 and September 2009 were described in the 2010 MPUR including dates of contacts.

The Coalition contacted 100% of the targeted growers and recorded 100% of management practice information in a Microsoft Access database. A summary of current and newly implemented management practices was initially presented as an addendum to the 2010 MPUR.

Performance Goal 4: Encourage growers to implement additional management practices based on water quality results.

The Coalition conducted follow up meetings and phone calls between 2010 and 2011 to obtain follow up information regarding practices that were implemented in 2009 and 2010.

In 2010, the Coalition extended its outreach to 12 additional members in the Duck Creek subwatershed who farm adjacent to the creek (and have the potential for spray drift into Duck Creek). Growers were contacted in 2010 based on their recent use of chlorpyrifos, and all were encouraged to either switch to a new product or implement practices that would eliminate discharge. A summary of this additional focused outreach is included in the "First Priority Summary of Management Practices" section of this report. Additional focused outreach is planned for all first priority subwatersheds in 2012; the results of these contacts will be summarized in the 2013 MPUR.

Performance Goal 5: Evaluate effectiveness of the new management practices implemented during 2009 and 2010.

The Coalition evaluates the effectiveness of new management practices by reviewing water quality monitoring results collected during years after implementation of new management practices (2010 and 2011). Those results are then compared to monitoring results from years prior to implementation of new practices in the first priority subwatersheds (refer to the Evaluation of Management Practice Effectiveness section of this report).

Water quality results for MPM conducted in 2011 within each subwatershed are included in the High Priority Subwatershed Analysis Appendix (Appendix I) and are tabulated in Table 3.

Water quality results from 2011 are discussed in the Evaluation of Management Practice Effectiveness section of this report. The Coalition will continue to monitor all three first high priority sites in 2012 for

management plan constituents and will update its evaluation of management practice effectiveness in the 2013 MPUR.

Performance Goal 6: Consult with CVRWQCB at least once during 2008/2009 to discuss Management Plan activities and consider if changes need to be made in Management Plan for High Priority waterbodies.

The Coalition met with Regional Board staff to discuss the Management Plan activities for high priority waterbodies; including status of individual contacts, survey completion, and time extensions for completing Performance Goals. Quarterly meeting dates from 2009 were reported in the 2010 MPUR (Table 10, page 30). The Coalition continues to discuss Management Plan activities with the Regional Board during meetings; quarterly meetings held in 2011 with Regional Board staff are listed in Table 13.

Table 8. High Priority Performance Goals status for 2008-2010 high priority subwatersheds (Duck Creek @ Hwy 4, Lone Tree Creek @ Jack Tone Rd and Unnamed Drain to Lone Tree Creek @ Jack Tone Rd), revised on August 3, 2009 and approved on December 29, 2009.

Original performance goals were for Duck Creek @ Hwy 4 and were extended to Lone Tree Creek and Unnamed Drain to Lone Tree Creek.

Performance Goal/Performance Measure	Outputs	Who	Status as of April 1, 2012[1]		
			Duck Creek @ Hwy 4	Lone Tree Creek @ Jack Tone Rd	Unnamed Drain to Lone Tree Creek @ Jack Tone
Performance Goal 1: Conduct grower group meetings.					
Performance Measure 1.1 – Hold at least two meetings for members in the Duck Creek @ Hwy 4 site subwatershed focused on high priority constituents (i.e. chlorpyrifos) during the 2008/2009 winter season.	Report meeting dates, attendance numbers and agendas in Management Plan update (April 2009).	MLJ-LLC	**Complete**	**Complete**	**Complete**
Performance Goal 2: Individually contact members on adjacent properties to waterways where discharges have been identified during winter 2008/2009.					
Performance Measure 2.1 – 100% of identified growers contacted.	Report ratio of individual contacts made versus total growers identified with discharges.	Mike Wackman	**35 of 35** (100%)	**43 of 43**[2] (100%)	**34 of 34**[3] (100%)
Performance Measure 2.2 – Contact owners/operators representing at least 1,000 acre of membership acreage in the site subwatershed.	Report ratio of acreage represented by individual contacts versus total subwatershed acreage[4].	MLJ-LLC	**4,978 of 15,046**[5] (33%)	**3,742 of 29,232**[5] (13%)	**6,463 of 29,892**[5] (22%)
Performance Goal 3 Update: Establish current practices (beyond established baseline practices) by September 2009 on adjacent properties to waterways or where discharges are identified.					
Performance Measure 3.1 – Obtain current management practice information from 100% of targeted growers	Completed individual contact checklists recorded in an Access database.	Mike Wackman / MLJ-LLC	**35 of 35** (100%)	**43 of 43**[2] (100%)	**34 of 34**[3] (100%)
Performance Measure 3.2 – Document current management practices of the targeted growers during individual contacts and encourage the adoption of new practices not currently implemented.	Record of management practices used that may reduce agricultural impact on water quality.	MLJ-LLC			
Performance Measure 3.3 – Document management practices targeted grower was encouraged to implement.	Summary of management practice evaluations on a site subwatershed level in the Management Plan update (April 2010).	MLJ-LLC	**Complete**	**Complete**	**Complete**
Performance Goal 4: Encourage growers to implement additional management practices based on water quality results.					
Performance Measure 4.1 –By February 2010, document additional management practices implemented by identified growers.	Summary of management practices implemented as a result of individual contacts.	MLJ-LLC	**Complete**	**Complete**	**Complete**
Performance Goal 5 Update: Evaluate effectiveness of the new management practices implemented during 2009 and 2010.					
Performance Measure 5.1 Update – Assess water quality results for 90 % completeness, 90% accuracy, and 90% precision from Coalition monitoring location within the priority site subwatershed.	Summary of 2009 and 2010 water quality data from site subwatershed (April 2010 and 2011).	MLJ-LLC	**2010-2011 Summary Complete** April 1, 2012[6]	**2010-2011 Summary Complete** April 1, 2012[6]	**2010-2011 Summary Complete** April 1, 2012[6]
Performance Goal 6: Consult with CVRWQCB at least once during 2008/2009 to discuss Management Plan activities and consider if changes need to be made in Management Plan strategy for High Priority waterbodies.					

[1]Acreage updated since 2010 MPUR due to updated GIS parcel layers (actual parcels did not change); acreage of individual contacts now based on irrigated acres (previously based on enrolled acres).
[2]46 reported in 2010 MPUR. Three members removed due to no pesticide use.
[3]35 reported in 2010 MPUR. Duplicate member removed (filled out by both permittee and member).
[4]Performance Goal states that 'total subwatershed acreage' was reported; however, the Coalition reported overall irrigated acres for the first priority subwatersheds.
[5]Irrigated acreage for first priority subwatersheds comes from 2008/2009 parcel data layers.
[6]The Coalition will continue MPM at Duck Creek, Lone Tree Creek, and Unnamed Drain to Lone Tree Creek to assess water quality improvements.

Table 9. Updated management practices survey, outreach, implementation and evaluation tracking schedule based on the table submitted with the SJCDWQC schedule extension request on August 3, 2009 to reflect status of April 1, 2012.

Priority Subwatershed Evaluation of Management Practices	Duck Creek @ Hwy 4		Lone Tree Creek @ Jack Tone Rd		Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	
	2009 Schedule	Status April 1, 2012	2009 Schedule	Status April 1, 2012	2009 Schedule	Status April 1, 2012
1a) Associate baseline survey responses with member APNs	Completed	Completed	Completed	Completed	Completed	Completed
1b) Determine number/type of management practices currently in place	Completed (December 30, 2008)	Completed	Completed (December 30, 2008)	Completed	Completed (December 30, 2008)	Completed
2a) Group Grower Contacts	Completed (November 24, 2008)	Completed	Completed (March 5, 2009)	Completed	Completed (November 24, 2008 and March 5, 2009)	Completed
2b) Individual Contacts*	November 2008 – September 2009	Completed	March 2009 – September 2009	Completed	March 2009 – September 2009	Completed
3) Implementation of new management practices	April 2009 – February 2010	Completed[1]	April 2009 – February 2010	Completed	April 2009 – February 2010	Completed
4) Assess number/type of new management practices implemented	October 2009 - February 2010	Completed[1]	October 2009 - February 2011	Completed	October 2009 - February 2011	Completed
5) Evaluate effectiveness of new management practices	April 2009 - February 2011	Completed[2]	April 2009 - February 2011	Completed	April 2009 - February 2011	Completed

*Individual contacts in this table refers to contacts resulting in returned surveys; in all other places in this document contact refers to initial contact by the Coalition with a targeted member to review management practices and fill out/return a survey.

[1]Management practices have been implemented and documented with follow up surveys in all three first priority subwatersheds; however due to additional contacts made in the Duck Creek subwatershed during 2010 and the potential for additional funding in all three subwatersheds, there may be new management practices implemented in 2012 that could improve water quality.

[2] An evaluation of the Coalition's water quality data collected in 2011 compared to implemented management practices in all three subwatersheds can be reviewed in the Evaluation of Management Practice Effectiveness section of this report.

Second Priority Subwatersheds (2010 – 2012)

Performance goals, measures, outputs and completion dates for second priority subwatersheds are included in Table 10 and were approved by the Regional Board on December 29, 2009.

Performance Goal 1: Individually contact members on adjacent properties to waterways where discharges have been identified to fill out surveys.

As described in the 2011 MPUR, the Coalition conducted grower group meetings in January 2010 at which time targeted members filled out surveys and Coalition representatives discussed water quality impairments and management practices that could be implemented.

Performance Goal 2: Establish current practices (beyond established baseline practices) on adjacent properties to waterways or where discharges are identified.

As reported in the 2011 MPUR, the Coalition successfully identified and contacted targeted members in 2010 to attend grower group meetings, document current management practices and indicate what additional management practices may be implemented in 2010 or 2011.

Performance Goal 3: Encourage growers to implement additional management practices based on water quality results.

One hundred percent of the management practices that members indicated they would implement in 2010 and 2011 have been recorded in an Access database (Table 10). As no new practices were planned for 2011, a complete summary of current and newly implemented management practices was included in the Second Priority Subwatersheds Summary of Management Practices section of the 2011 MPUR.

Due to continued exceedances in 2011 of the WQTL for chlorpyrifos in the Littlejohns Creek subwatershed, additional focused outreach is planned for growers in the Littlejohns Creek subwatershed in 2012; the results of these contacts will be summarized in the 2013 MPUR.

Performance Goal 4: Evaluate effectiveness of the new management practices implemented during years that site is high priority.

The Coalition conducted MPM in the second high priority site subwatersheds during 2011 to assess the effectiveness of new management practices. Water quality results for MPM within each subwatershed are included in the High Priority Subwatershed Analysis Appendix (Appendix I) and are tabulated in Table 3.

The Coalition initiated follow up contacts with growers beginning in February 2011 to record new practices that were implemented in 2010 and evaluate the implementation of new practices with 2010 water quality results. The Coalition will conduct MPM at all second high priority sites during 2012 and will update its evaluation of management practice effectiveness to include monitoring results from 2012 in the 2013 MPUR.

Performance Goal 5: Consult with the CVRWQCB at least to discuss Management Plan activities and consider if changes need to be made in the Management Plan strategy for high priority waterbodies.
Quarterly meeting dates from 2010 were reported in the 2011 MPUR (Table 10, page 30). Dates of quarterly meetings held in 2011 are listed in Table 13.

Table 10. High Priority Performance Goals status for 2010 - 2012 high priority subwatersheds (Grant Line Canal near Calpack, Grant Line Canal @ Clifton Ct and Littlejohns Creek @ Jack Tone), originally approved on December 29, 2009, revised on June 4, 2010 and approved on August 24, 2010.

Performance Goal/Performance Measure	Outputs	Who	Status as of April 1, 2012[1]		
			Grant Line Canal near Calpack Rd	Grant Line Canal @ Clifton Ct	Littlejohns Creek @ Jack Tone
Performance Goal 1: Individually contact members on adjacent properties to waterways where discharges have been identified to fill out surveys.					
Performance Measure 1.1 – 100% of identified growers contacted to fill out surveys.	Report ratio of individual initial contacts made versus total growers identified to contact.	Mike Wackman	**2 of 2** (100%)	**2 of 2** (100%)	**16 of 16** (100%)
Performance Measure 1.2 – Contact owners/operators representing at least 1,000 acre of membership acreage in the site subwatershed (if subwatershed is greater than 800 acres).	Report ratio of acreage represented by individual contacts versus subwatershed acreage determined to have direct drainage.	MLJ-LLC	**686 of 686**[2] (100%)	**259 of 259**[2] (100%)	**2,796 of 5,277**[2] (53%)
Performance Goal 2: Establish current practices (beyond established baseline practices) on adjacent properties to waterways or where discharges are identified.					
Performance Measure 2.1 – Document current management practices of 100% of identified growers during individual contacts and encourage the adoption of new practices not currently implemented.	Record current management practices used that may reduce agricultural impact on water quality.	Mike Wackman	**2 of 2** (100%)	**2 of 2** (100%)	**16 of 16** (100%)
Performance Measure 2.2 – Document management practices that the identified growers were encouraged to implement.	Summary of management practice evaluations on a site subwatershed level in the Management Plan update.	MLJ-LLC	**Complete**	**Complete**	**Complete**
Performance Goal 3: Encourage growers to implement additional management practices based on water quality results.					
Performance Measure 3.1 –Document (e.g. assess number/type) new management practices implemented by identified growers.	Record implemented management practices (Access database).	Mike Wackman / MLJ-LLC	**Complete**	**Complete**	**Complete**
	Summary of management practices implemented as a result of individual contacts.	MLJ-LLC			
Performance Goal 4: Evaluate effectiveness of the new management practices implemented during years that site is high priority.					
Performance Measure 4.1 Update – Assess water quality results from Coalition monitoring location within the priority site subwatershed.	Summary of water quality data from Management Plan Monitoring.	MLJ-LLC	**2011 Summary Complete** April 1, 2012[3]	**2011 Summary Complete** April 1, 2012[3]	**2011 Summary Complete** April 1, 2012[3]
Performance Goal 5: Consult with CVRWQCB at least once to discuss Management Plan activities and consider if changes need to be made in the Management Plan strategy for high priority waterbodies.					

[1] County overall direct drainage acreage has been updated; the assessment of the acreages has been updated to be more accurate by updating GIS parcel layers (actual parcels did not change).
[2] Overall irrigated direct drainage acreage for second priority subwatersheds comes from 2009/2011 parcel data layers.
[3] MPM continues at Grant Line Canal near Calpack Rd, Grant Line Canal @ Clifton Court Rd and Littlejohns Creek @ Jack Tone Rd to assess water quality data.

Third Priority Subwatersheds (2011 – 2013)

The third high priority subwatersheds include French Camp Slough @ Airport Way, Mokelumne River @ Bruella Rd and Terminous Tract Drain @ Hwy 12. Performance Goals follow the same format as the second high priority subwatershed Performance Goals and were approved on January 10, 2011 (Table 11).

Performance Goal 1: Individually contact members on adjacent properties to waterways where discharges have been identified to fill out surveys.

As reported in the 2011 MPUR, the Coalition conducted grower group meetings in January 2011 at which time targeted members filled out surveys and Coalition representatives discussed water quality impairments and management practices that could be implemented.

A total of 29 growers were contacted representing 6482 acres or 29% of the acreage determined to have the potential for direct drainage in the third priority subwatersheds (Table 11). Of the three subwatersheds, French Camp Slough @ Airport Way had the highest percent of acreage represented by contacted growers (45%) followed by Terminous Tract Drain @ Hwy 12 (40%) and Mokelumne River @ Bruella Rd (10%, Table 11).

Performance Goal 2: Establish current practices (beyond established baseline practices) on adjacent properties to waterways or where discharges are identified.

The Coalition met with growers during the January 2011 meetings to assist with the completion of surveys. To date, 100% of completed management practice surveys from the third priority subwatersheds have been received and recorded into the Access database.

A summary of current management practices is included in the Third Priority Subwatersheds Summary of Management Practices section of this report.

Performance Goal 3: Encourage growers to implement additional management practices based on water quality results.

As discussed in the 2011 MPUR, University of California Extension Specialists discussed management practices during grower meetings that could be used to help reduce the impact of agriculture on downstream waterbodies. One hundred percent of the management practices to be implemented by growers in 2011 and 2012 were recorded in an Access database (Table 11). A summary of these practices is included in the Third Priority Subwatersheds Summary of Management Practices section of this report.

The Coalition mailed follow up post cards to growers in the third priority subwatersheds on January 13, 2012. All information that was received is recorded in an Access database (Table 11). A preliminary summary of these management practices is included in the Third Priority Subwatersheds Summary of Management Practices.

Performance Goal 4: Evaluate effectiveness of the new management practices implemented during years that site is high priority.

The Coalition conducted Year 0 and Year 1 MPM in the third priority subwatersheds in 2010 and 2011, respectively. Year 2 of MPM in the third priority subwatersheds is scheduled during 2012 to assess water quality improvements (Table 7). The Third Priority Subwatersheds Evaluation of Management Plan Effectiveness section of this report discusses the water quality results from 2010 and 2011 MPM in the third priority subwatersheds. A final evaluation will be submitted with the 2013 MPUR.

Performance Goal 5: Consult with the CVRWQCB at least to discuss Management Plan activities and consider if changes need to be made in the Management Plan strategy for high priority waterbodies.

The Coalition met with the Regional Board quarterly to discuss Coalition activities in relation to the third priority subwatersheds in February, May, August and November 2011 (Table 13).

Table 11. High Priority Performance Goals status for 2011 - 2013 high priority subwatersheds (French Camp Slough @ Airport Way, Mokelumne River @ Bruella Rd, Terminous Tract Drain @ Hwy 12), approved on January 10, 2011.

Performance Goal/Performance Measure	Outputs	Who	Status as of April 1, 2012[1]		
			French Camp Slough @ Airport Way	Mokelumne River @ Bruella Rd[2]	Terminous Tract Drain @ Hwy 12
Performance Goal 1: Individually contact members on adjacent properties to waterways where discharges have been identified to fill out surveys.					
Performance Measure 1.1 – 100% of identified growers contacted to fill out surveys.	Report ratio of individual initial contacts made versus total growers identified to contact.	Mike Wackman	**13 of 13** (100%)	**12 of 12** (100%)	**4 of 4** (100%)
Performance Measure 1.2 – Contact owners/operators representing at least 1,000 acre of membership acreage in the site subwatershed (if subwatershed is greater than 800 acres).	Report ratio of acreage represented by individual contacts versus subwatershed acreage determined to have direct drainage.	MLJ-LLC	**3,767 of 8,417** (45%)	**937 of 9,642** (10%)	**1,778 of 4,400** (40%)
Performance Goal 2: Establish current practices (beyond established baseline practices) on adjacent properties to waterways or where discharges are identified.					
Performance Measure 2.1 – Document current management practices of 100% of identified growers during individual contacts and encourage the adoption of new practices not currently implemented.	Record current management practices used that may reduce agricultural impact on water quality.	Mike Wackman	**13 of 13** (100%)	**12 of 12** (100%)	**4 of 4** (100%)
Performance Measure 2.2 – Document management practices that the identified growers were encouraged to implement.	Summary of management practice evaluations on a site subwatershed level in the Management Plan update.	MLJ-LLC	**Complete** April 1, 2012	**Complete** April 1, 2012	**Complete** April 1, 2012
Performance Goal 3: Encourage growers to implement additional management practices based on water quality results.					
Performance Measure 3.1 –Document (e.g. assess number/type) new management practices implemented by identified growers.	Record implemented management practices (Access database).	Mike Wackman / MLJ-LLC	**In Progress:** November 30, 2012	**In Progress:** November 30, 2012	**In Progress:** November 30, 2012
	Summary of management practices implemented as a result of individual contacts.	MLJ-LLC	**In Progress:** April 1, 2013	**In Progress:** April 1, 2013	**In Progress:** April 1, 2013
Performance Goal 4: Evaluate effectiveness of the new management practices implemented during years that site is high priority.					
Performance Measure 4.1 Update – Assess water quality results from Coalition monitoring location within the priority site subwatershed.	Summary of water quality data from Management Plan Monitoring.	MLJ-LLC	**In Progress:** April 1, 2013	**In Progress:** April 1, 2013	**In Progress:** April 1, 2013
Performance Goal 5: Consult with CVRWQCB at least once to discuss Management Plan activities and consider if changes need to be made in the Management Plan strategy for high priority waterbodies.					

[1]Overall irrigated direct drainage acreage for 3rd Priority Subwatersheds comes from 2011 parcel data layers.
[2]Two members were removed from the Mokelumne River target grower contact list due to their parcels no longer being farmed and three members were dropped due to not responding to survey.

Fourth Priority Subwatersheds (2012 – 2014)

The fourth high priority subwatersheds include Kellogg Creek along Hoffman Ln, Mormon Slough @ Jack Tone Rd and Sand Creek @ Hwy 4 Bypass. Performance Goals (approved November 14, 2011) for this set of subwatersheds follow the same format as the performance goals for the second and third set of high priority subwatersheds (Table 12).

Performance Goal 1: Individually contact members on adjacent properties to waterways where discharges have been identified to fill out surveys.

The Coalition contacted 100% of members within the Kellogg Creek, Mormon Slough and Sand Creek subwatersheds. Members were mailed survey packets and notification regarding grower meetings to discuss the Coalition's Management Plan strategy, water quality results and management practices. Growers were asked to attend the meetings held on January 19 and 20, 2012 and bring the survey with them to complete. Members who did not attend the meeting were advised to mail in the completed survey.

Performance Goal 2: Establish current practices (beyond established baseline practices) on adjacent properties to waterways or where discharges are identified.

The Coalition is in the process of receiving and recording all completed surveys from the fourth priority subwatershed members who were unable to attend the three meetings held in January 2012. To date, the Coalition has received 36% of completed management practice surveys from growers in the Kellogg Creek subwatershed, 65% of the surveys from growers along the Mormon Slough and 100% of the surveys from growers in the Sand Creek subwatershed and these surveys have been entered into an Access database. A summary of currently implemented management practices and management practices to be implemented in 2012 within the Sand Creek subwatershed is included in the Fourth Priority Subwatersheds Summary of Management Practices section of this report.

Performance Goal 3: Encourage growers to implement additional management practices based on water quality results.

At the three January meetings held in 2012, University of California Extension Specialists discussed management practices that could be used to help reduce the impact of agriculture on downstream waterbodies. The meetings focused on watershed specific water quality impairments, crops of targeted growers, and reviewing efficacy of the various practices. The Coalition is reviewing the responses provided in the surveys regarding the management practices growers intend to implement in 2012 and 2013. The Coalition will follow up with growers in the fourth priority subwatersheds in 2013 to document newly implemented management practices and will report its findings in future MPURs submitted annually on April 1.

Performance Goal 4: Evaluate effectiveness of the new management practices implemented during years that site is high priority.

The Coalition conducted Year 0 MPM in 2011 for the fourth priority subwatersheds. The Coalition will also conduct MPM in these subwatersheds in 2012 through 2014 to assess water quality improvements.

The Coalition will evaluate effectiveness of new management practices implemented in 2012 and 2013 with water quality data obtained from MPM. An interim evaluation will be included in the 2013 MPUR and a final evaluation will be included in the 2014 MPUR if additional practices are to be implemented in 2013.

Performance Goal 5: Consult with the CVRWQCB at least to discuss Management Plan activities and consider if changes need to be made in the Management Plan strategy for high priority waterbodies. Quarterly meetings with the Regional Board to discuss Coalition activities have been scheduled for 2012 (Table 14). The Coalition has already met with Regional Board staff on March 1, 2012 for its first quarterly meeting. Other Coalition activities (meetings, outreach/education) that occurred during 2011 and early 2012 are referenced in Table 15.

All Coalition activities related to outreach (including mailings, grower meetings and individual meetings), in the first, second, third and fourth priority subwatersheds are listed in Table 15.

Table 12. High Priority Performance Goals status for 2012 - 2014 high priority subwatersheds (Kellogg Creek along Hoffman Ln, Mormon Slough @ Jack Tone Rd and Sand Creek @ Hwy 4 Bypass), approved on November 14, 2011.

Performance Goal/Performance Measure	Outputs	Who	Status as of April 1, 2012[1]		
			Kellogg Creek [2]	Mormon Slough @ Jack Tone Rd	Sand Creek @ Hwy 4 Bypass
Performance Goal 1: Individually contact members on adjacent properties to waterways where discharges have been identified to fill out surveys.					
Performance Measure 1.1 – 100% of identified growers contacted to fill out surveys.	Report ratio of individual initial contacts made versus total growers identified to contact.	Mike Wackman	**11 of 11** (100%) March 30, 2012	**34 of 34** (100%) March 30, 2012	**1 of 1** (100%) March 30, 2012
Performance Measure 1.2 – Contact owners/operators in the site subwatershed with direct drainage membership acreage.	Report ratio of acreage represented by individual contacts versus subwatershed acreage determined to have direct drainage.	MLJ-LLC	**412 of 5147** (8%)	**2,050 of 4209** (49%)	**116 of 3758** (3%)
Performance Goal 2: Establish current practices (beyond established baseline practices) on adjacent properties to waterways or where discharges are identified.					
Performance Measure 2.1 – Document current management practices of 100% of identified growers during individual contacts and encourage the adoption of new practices not currently implemented.	Record current management practices used that may reduce agricultural impact on water quality.	Mike Wackman	**4 of 11** (36%) October 31, 2012	**22 of 34** (65%) October 31, 2012	**1 of 1** (100%) October 31, 2012
Performance Measure 2.2 – Document management practices that the identified growers were encouraged to implement.	Summary of management practice evaluations on a site subwatershed level in the Management Plan update.	MLJ-LLC	**In Progress:** April 1, 2013	**In Progress:** April 1, 2013	**In Progress:** April 1, 2013
Performance Goal 3: Encourage growers to implement additional management practices based on water quality results.					
Performance Measure 3.1 –Document (e.g. assess number/type) new management practices implemented by identified growers.	Record implemented management practices (Access database).	Mike Wackman / MLJ-LLC	**In Progress:** November 30, 2013[3]	**In Progress:** November 30, 2013[3]	**In Progress:** November 30, 2013[3]
	Summary of management practices implemented as a result of individual contacts.	MLJ-LLC	**In Progress:** April 1, 2013/2014	**In Progress:** April 1, 2013/2014	**In Progress:** April 1, 2013/2014
Performance Goal 4: Evaluate effectiveness of the new management practices implemented during years that site is high priority.					
Performance Measure 4.1 Update – Assess water quality results from Coalition monitoring location within the priority site subwatershed.	Summary of water quality data from Management Plan Monitoring.	MLJ-LLC	**In Progress:** April 1, 2013/2014	**In Progress:** April 1, 2013/2014	**In Progress:** April 1, 2013/2014
Performance Goal 5: Consult with CVRWQCB at least once to discuss Management Plan activities and consider if changes need to be made in the Management Plan strategy for high priority waterbodies.					

[1]Overall irrigated direct drainage acreage for 4th Priority Subwatersheds comes from 2011 parcel data layers.
[2]Kellogg Creek includes members who have potential for direct drainage from both Kellogg Creek along Hoffman Ln and Kellogg Creek @ Hwy 4 subwatersheds.
[3]Initial documentation of implemented practices will be completed by this date; it is anticipated that not all growers will be able to implement practices within the first year and additional follow up will be conducted the following year.

Table 13. 2011 Regional Board quarterly meeting dates.

QUARTERLY MEETINGS	MEETING DATE
First Quarter Meeting	February 8, 2011
Second Quarter Meeting	May 3, 2011
Third Quarter Meeting	August 2, 2011
Fourth Quarterly Meeting	November 3, 2011

Table 14. 2012 Regional Board quarterly meeting dates (subject to change).

QUARTERLY MEETINGS	MEETING DATE
First Quarter Meeting	March 1, 2012
Second Quarter Meeting	June 5, 2012
Third Quarter Meeting	TBD
Fourth Quarterly Meeting	TBD

TBD-To be determined

Table 15. Coalition outreach in high priority subwatersheds.

Categories of outreach include Management Practice Tracking, BMP Outreach and Education, Grower Notification, and Collaborations and Special Studies.

AREA	DATE	CATEGORY	DETAILS	WHO
Lone Tree Creek (1st P)	21-Nov-08	BMP Outreach and Education / Management Practice Tracking	Individual grower meetings to discuss chlorpyrifos exceedances linked with individual grower use. Meetings included a visit to growers' fields to view runoff conditions and suggest/discuss potential management practices.	Rachelle Antinetti, Terry Prichard, and Joe Gasper (PCA)
Duck Creek @ Hwy 4 (1st P)	24-Nov-08	BMP Outreach and Education / Management Practice Tracking	Grower meeting to address measured water quality standard exceedances and to discuss BMPs and pesticide product options. 19 BMP surveys were completed.	Mike Wackman, Terry Prichard
Unnamed Drain to Lone Tree Creek (1st P)	30-Nov-09	Grower Notification / Management Practice Tracking	Growers with outstanding surveys contacted and surveys mailed to all growers.	Terry Prichard
Littlejohns Creek (2nd P)	6-Jan-10	Grower Notification / Management Practice Tracking	Littlejohns Creek Orchard Grower Meeting Announcement: send to 15 members. Mailing included meeting agenda and individual contact survey to be filled out before and during meeting.	MLJ-LLC Staff
Grant Line Canal, Littlejohns Creek (2nd P)	8-Jan-10	Grower Notification / Management Practice Tracking	Grant Line Canal and Littlejohns Creek Row Crop Grower Meeting Announcement: send to 6 members. Mailing included meeting agenda and individual contact survey to be filled out before and during meeting.	MLJ-LLC Staff
Littlejohns Creek (2nd P)	25-Jan-10	BMP Outreach and Education / Management Practice Tracking	Littlejohns Creek Orchard Grower Meeting: of the 15 members invited, 10 members were represented; a total of 21 people attended. Discussion topics included Coalition's purpose, current water impairments, ILRP status, and relevant BMPs. Members filled out management practice surveys.	Mike Wackman, Terry Prichard, Mick Canevari
Grant Line Canal, Littlejohns Creek (2nd P)	28-Jan-10	BMP Outreach and Education / Management Practice Tracking	Grant Line Canal and Littlejohns Creek Row Crop Grower Meeting: of the 6 members invited, 4 members were in attendance. Discussion topics included Coalition's purpose, current water impairments, ILRP status, and relevant BMPs. Members filled out management practice surveys.	Mike Wackman, Terry Prichard, Mick Canevari
Mokelumne River @ Bruella Rd Subwatershed (3rd P)	30-Dec-10	Grower Notification / Management Practice Tracking	Mokelumne River Initial Contact Grower Meeting Announcement Mailing: sent to 12 growers. Mailing included cover letter, meeting agenda, and individual contact survey packet to be filled out by grower during meeting.	Mike Wackman
Terminous Tract @ Hwy 12 Subwatershed (3rd P)	30-Dec-10	Grower Notification / Management Practice Tracking	Terminous Tract Initial Contact Grower Meeting Announcement Mailing: sent to 4 growers. Mailing included cover letter, meeting agenda, and individual contact survey packet to be filled out by grower during meeting.	Mike Wackman
French Camp Slough @ Airport Way (3rd P)	30-Dec-10	Grower Notification / Management Practice Tracking	French Camp Slough Initial Contact Grower Meeting Announcement Mailing: sent to 13 growers. Mailing included cover letter, meeting agenda, and individual contact survey packet to be filled out by grower during meeting.	Mike Wackman
Mokelumne River @ Bruella Rd Subwatershed (3rd P)	13-Jan-11	BMP Outreach and Education / Management Practice Tracking	Mokelumne River Initial Contact Grower Meeting: of the 12 targeted members, 8 attended the meeting. Coalition staff discussed the management plan high priority subwatershed tracking process, the water quality concerns for the local subwatershed, and helped growers to fill out their individual management practice surveys.	Mike Wackman and Terry Prichard
Terminous Tract @ Hwy 12 Subwatershed (3rd P)	19-Jan-11	BMP Outreach and Education / Management Practice Tracking	Terminous Tract Initial Contact Grower Meeting: all 4 targeted members attended the meeting. Coalition staff discussed the management plan high priority subwatershed tracking process, the water quality concerns for the local subwatershed, and helped growers to fill out their individual management practice surveys.	Mike Wackman and Terry Prichard

AREA	DATE	CATEGORY	DETAILS	WHO
French Camp Slough @ Airport Way (3rd P)	20-Jan-11	BMP Outreach and Education / Management Practice Tracking	French Camp Slough Initial Contact Grower Meeting: of the 13 targeted members, 8 attended the meeting. Coalition staff discussed the management plan high priority subwatershed tracking process, the water quality concerns for the local subwatershed, and helped growers to fill out their individual management practice surveys.	Mike Wackman and Terry Prichard
Duck Creek @ Hwy 4, Lone Tree @ Jack Tone Rd (1st P)	3-Feb-11	Grower Notification / Management Practice Tracking	First Priority Follow Up Postcard: Sent to 3 members in the 1st priority subwatersheds who indicated they planned to implement in 2010 (1 grower in Duck Creek and 2 growers in Lone Tree Creek). Members were instructed to indicate which recommended and additional management practices they implemented in 2010 and to mail the return card. Growers were notified if the Coalition did not receive a return card by March 4, 2011; the Coalition would call the grower.	Mike Wackman
Grant Line Canal, Littlejohns Creek (2nd P)	3-Feb-11	Grower Notification / Management Practice Tracking	Second Priority Follow Up Postcard: sent to all members with recommended practices in the second priority subwatersheds. Members were instructed to indicate which recommended and additional management practices they implemented in 2010 and to mail the return card. Growers were notified if the Coalition did not receive a return card by March 4, 2011; the Coalition would call the grower.	Mike Wackman
Mokelumne River and French Camp Slough Subwatersheds (3rd P)	30-Sep-11	Grower Notification / Management Practice Tracking	French Camp Slough and Mokelumne River Initial Contact Grower Survey - Final Attempt to Contact Mailing: sent to 3 growers in French Camp Slough and 4 growers in Mokelumne River. Letter reminded members of their responsibility to provide the Coalition with requested management practice information and indicated if a response was not received by Oct. 21, 2011, the member would be dropped from the Coalition. A management practice survey was also enclosed.	Mike Wackman
Kellogg Creek, Mormon Slough, and Sand Creek subwatersheds (4th P)	14-Dec-11	Grower Notification / Management Practice Tracking	4th Priority Initial Contact Grower Meeting Announcement Mailing: sent to 11 Kellogg Creek growers, 34 Mormon Slough growers, and 1 Sand Creek grower. Packet contained a cover letter explaining the management plan process and grower responsibilities, meeting details and agenda, and grower survey.	Mike Wackman

BMP- Best Management Practice
ILRP- Irrigated Lands Regulatory Program

MANAGEMENT PRACTICES

The Coalition documents current management practices, recommended management practices and newly implemented practices based on individual contacts and survey results for each high priority site subwatershed. The Coalition updated its general classifications of management practices (originally listed in the SJCDWQC Management Plan) that would be effective at reducing the impacts of agricultural discharges on water quality. Table 16 includes a list of management practices grouped according to either pesticide application or runoff management practices.

Table 16. Management practice categories and associated management practices recommended to growers.

MANAGEMENT PRACTICE CATEGORY	MANAGEMENT PRACTICE
Pesticide Application Management Practices	Reduction in application rates
	Alternative material application
	Spot treating
Runoff Management Practices	Sprinkler or microspray irrigation
	Retention pond/holding basin
	Grass waterways or grass filter strips
	Reduce water volumes using irrigation management
	Treat runoff waters with PAM or other materials

Coalition members with direct drainage and past applications of pesticides of concern were contacted to attend grower meetings and complete surveys. Growers completed surveys by recording their current management practices and if they planned to implement management practices in the next year. Growers that indicated they would implement one or more new management practices are contacted again and asked 1) if they implemented the practice(s) in the last year, 2) if they did not implement the practice(s) in the last year, why not, and 3) if they implemented other/additional practices not listed. If the grower indicates that they cannot implement the intended practice due to insufficient time or financial restraints, they are followed up with after an additional year.

The Coalition successfully completed contacts and outreach in the first priority subwatersheds (Duck Creek @ Hwy 4, Lone Tree Creek @ Jack Tone Rd and Unnamed Drain to Lone Tree Creek @ Jack Tone Rd) and second priority subwatersheds (Grant Line Canal @ Clifton Court Rd, Grant Line Canal near Calpack and Littlejohns Creek @ Jack Tone Rd). The 2011 MPUR contained an evaluation of current and implemented management practices for all first and second priority subwatersheds based on initial and follow up surveys. Additional focused outreach continued in 2010 and 2011 with growers in the Duck Creek @ Hwy 4 subwatershed who were continuing to apply pesticides of concern and had the potential to drain into the creek. The following sections include the final analysis of current and implemented management practices in the Duck Creek @ Hwy 4 subwatershed (including additional focused outreach) as well as a brief summary of management practices in the remaining first and second priority subwatersheds. Due to continued water quality impairments in 2011, additional focused outreach is

planned for 2012 with growers in the Duck Creek @ Hwy 4, Lone Tree Creek @ Jack Tone Rd, Unnamed Drain to Lone Tree Creek @ Jack Tone Rd, and Littlejohns Creek @ Jack Tone Rd subwatersheds.

Members in the third priority subwatersheds (French Camp Slough @ Airport Way, Mokelumne River @ Bruella Rd and Terminous Tract Drain @ Hwy 12) attended grower meetings in the winter of 2011. Those who did not attend the grower meetings were met with individually. Individual meetings with 100% of targeted growers were completed during the fall of 2011. Follow up contacts to determine practices implemented in 2011 were initiated early in 2012. The following sections provide a complete analysis of current practices, practices to be implemented in 2011, as well as the preliminary results of implemented practices for the third priority subwatersheds. A complete analysis of implemented practices will be reported in the 2013 MPUR.

The Coalition has begun focused outreach in the fourth priority subwatersheds (Kellogg Creek along Hoffman Ln, Mormon Slough @ Jack Tone Rd and Sand Creek @ Hwy 4 Bypass). The Coalition compiled a list of targeted members based on their potential to drain to the creek or have spray drift into the creek (within 200 yards), application of constituents of concern, and/or whether they have applications associated with toxicity. In the fall of 2011, letters outlining the management plan process and responsibilities of Coalition members were mailed to members in the Kellogg Creek along Hoffman Ln (11 members), Mormon Slough @ Jack Tone Rd (34 members) and Sand Creek @ Hwy 4 Bypass (1 member) subwatersheds. The Coalition conducted grower group meetings with targeted growers to assess their current agriculture operations and discuss water quality concerns. Current and recommended management practices for the fourth priority subwatersheds will be evaluated in the 2013 MPUR.

FIRST PRIORITY SUBWATERSHEDS SUMMARY OF MANAGEMENT PRACTICES (2008-2010)

Focused outreach to document current management practices and track implementation of additional management practices in first priority subwatersheds began in the fall of 2008 and is scheduled to continue through 2012. The first priority subwatersheds are Duck Creek @ Hwy 4, Lone Tree Creek @ Jack Tone Rd and Unnamed Drain to Lone Tree Creek @ Jack Tone Rd. The Coalition completed initial and follow up surveys with 100% of targeted growers in the Duck Creek @ Hwy 4 (35 growers), Lone Tree Creek @ Jack Tone Rd (43 growers) and Unnamed Drain to Lone Tree Creek @ Jack Tone Rd (34 growers) subwatersheds (Table 8). Based on survey results, the Coalition reported a final analysis of current practices from 2008 as well as practices implemented from 2009 to 2010 on a subwatershed level in the 2011 MPUR (pages 43-58). The Coalition conducted additional individual meetings in 2010 with growers within the Duck Creek subwatershed. Due to continued chlorpyrifos exceedances within the Duck Creek subwatershed, Coalition representatives discussed the importance of management practices such as reducing the use of chlorpyrifos including options of using products without chlorpyrifos. Results from these contacts have been added into the overall assessment of new management practices implemented within first priority subwatersheds.

Figures 4 and 5 illustrate recorded management practices in all three first priority subwatersheds. When evaluating management practices implemented in first priority subwatersheds and the acreage associated with them, a parcel may be included under multiple management practices. The summaries of management practices indicate the percentages of a particular management practice which is calculated as the acres associated with each management practice compared to the total acres for all management practices (referred to as percent of acres with recorded practices). The most common practice planned for implementation in the first priority subwatersheds was reducing the use of pesticides (36% of the acreage associated with recorded practices, Figure 4). Reducing runoff water volume, installation of sprinkler or micro spray irrigation and planting of center grass rows or filter strips were common options as well. Practices implemented between 2009 and 2010 follow trend of what was planned for implementation (Figure 5).

Figure 4. First priority management practices to be implemented in 2009.

Percentage based on acreage associated with a specific practice compared to the summed acreage associated with all practices.

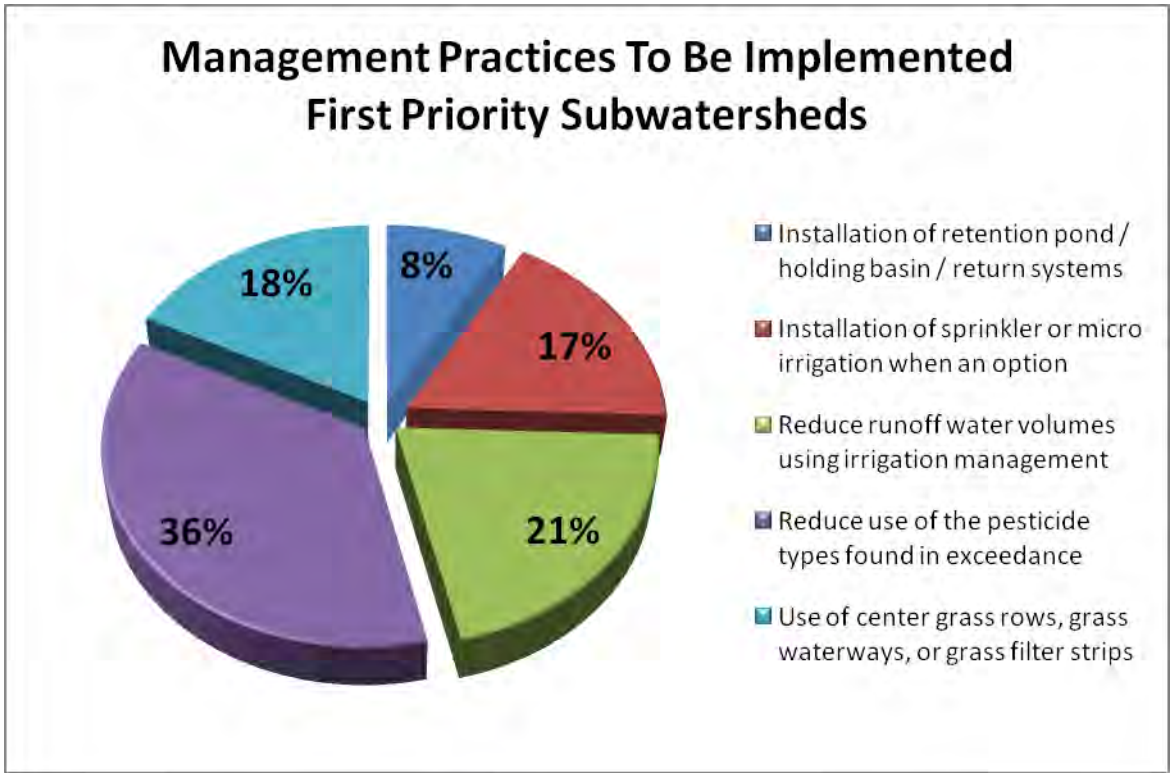
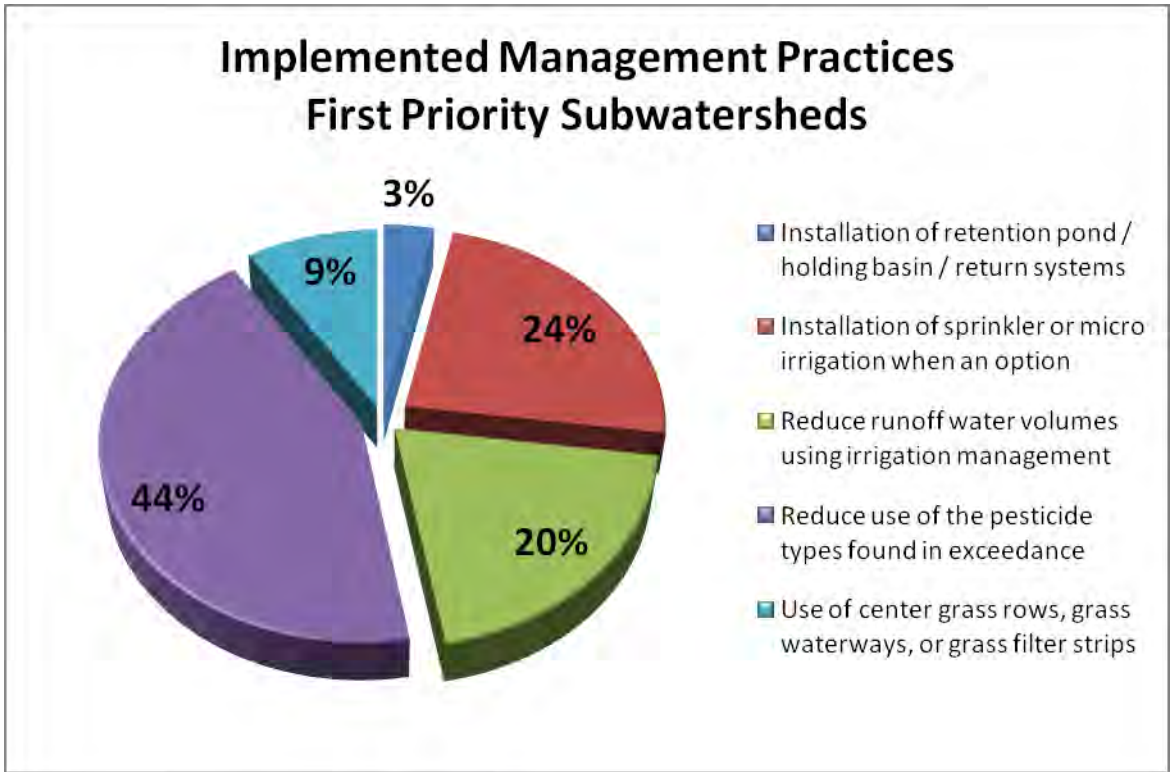


Figure 5. First priority management practices implemented in 2009-2010.

Percentage based on acreage associated with a specific practice compared to the summed acreage associated with all practices.



Summary of Management Practices from Additional Contacts - 2010

During 2010, six permittees representing twelve members and 2,552 acres in the Duck Creek @ Hwy 4 subwatershed received additional focused outreach due to their continued use of chlorpyrifos and their close proximity to the creek. Of these twelve members, eight were previously contacted as targeted members who had completed initial surveys. Between 2008 and 2010, 39 members representing 6,310 acres within the Duck Creek @ Hwy 4 subwatershed were contacted; management practices were documented for all contacts (Table 17, Figure 6).

During additional focused outreach, Coalition representatives met with permittees and discussed recent PUR information, current management practices, and the location and flow of waterways on the field(s). The meetings focused on encouraging improved management practices for irrigation and storm runoff, use rates, and buffer zones. Alternative products to chlorpyrifos were discussed and recommended.

Nineteen growers in 2009 indicated on their initial surveys that they intended to implement additional practices in 2009 or 2010; 100% of growers implemented additional practices. Of the 12 additional contacts in 2010, nine members implemented new management practices in 2010. Out of these nine, one grower implemented additional practices to those already implemented in 2009.

The Coalition concluded that water quality impairments within Duck Creek are mainly a result of irrigation runoff and spray drift. It is believed that discussions during individual meetings will lead to improved water quality within the Duck Creek subwatershed. All growers indicated that they intended to discontinue or reduce use of chlorpyrifos on their farms. As a result of these meetings, new management practices were implemented across 2,053 targeted acres. Reduced applications of pesticides increased from 48% to 62% of acres with recorded practices (see 2011 MPUR). Nineteen percent of acres with recorded practices planted center grass rows, grass waterways or grass filter strips to reduce both water and sediment runoff, 11% implemented irrigation management to reduce runoff and 8% now use sprinkler or micro irrigation when an option (Figure 7).

Table 17. Duck Creek @ Hwy 4 targeted members and acreage in 2009 and 2010 based on additional contacts.
If a member was already contacted once, the total counts the member or sums their acreage only once.

YEAR	TYPE OF CONTACT	COUNT OF MEMBERS	SUM OF ACREAGE
2009	Initial Contacts	35	4,978
2010	Additional Contacts	12	2,552
	Previously Contacted in 2009	*8*	*1,220*
	Not Previously Contacted	*4*	*1,332*
	TOTAL	**39**	**6,310**

Figure 6. Duck Creek @ Hwy 4 member parcels with direct drainage potential.

Parcels with additional outreach are indicated for additional outreach completed in 2010 only.

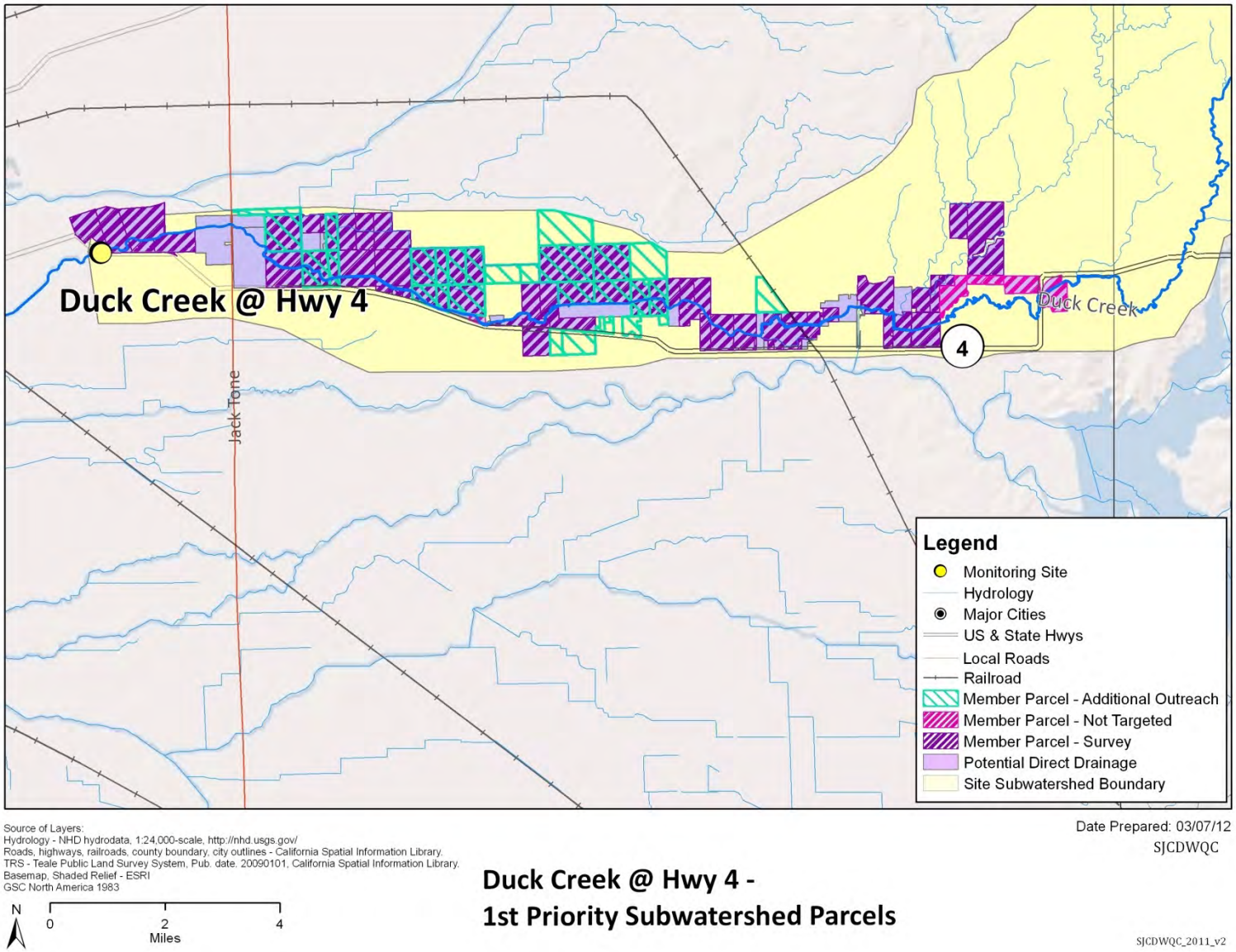
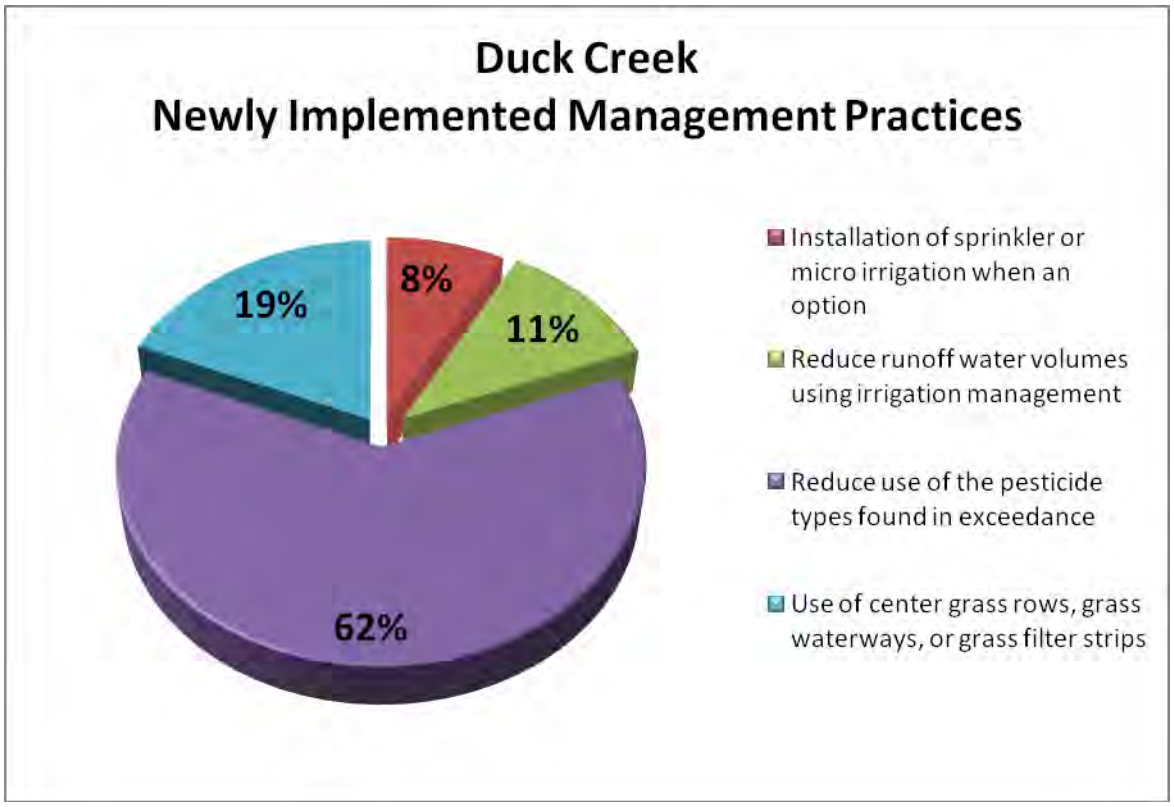


Figure 7. Duck Creek management practices implemented in 2009-2010. Results based on follow up results and additional focused outreach.

Percentage based on acreage associated with a specific practice compared to the summed acreage associated with all practices.



Additional Contacts - 2012

In the beginning of 2012, the Coalition identified additional growers in all first priority subwatersheds that may be contributing to continued water quality impairments, specifically the exceedances of the chlorpyrifos WQTL. Growers were selected for additional outreach based on five factors:

1. The grower is a member of the Coalition,
2. PUR data indicated that the grower applied chlorpyrifos in 2010 or 2011,
3. Applications of chlorpyrifos were associated with an exceedance of chlorpyrifos (applied no more than 30 days prior to an exceedance),
4. The parcels with chlorpyrifos use had the potential to drain or have spray drift into the creek, and
5. past survey results indicated that additional or improved management practices could be implemented.

Topics to be discussed during additional focused outreach meetings in 2012 will include managing storm and irrigation runoff (including improving water infiltration, capturing and/or recycling runoff water, and treating runoff with Landguard or PAM), reducing drift to water sources (including noting application conditions, equipment, product choice, buffer zones, and application method) as well as discontinuing, reducing, or changing the type of pesticide used. Discussions regarding pesticide use will focus mainly on chlorpyrifos; however, all pesticides in use will be reviewed. Outreach to these additional growers

began in the Duck Creek subwatershed in 2010 and is scheduled to continue in all three of the first priority subwatersheds during 2012.

In 2012, three additional growers representing 563 member acres in the Duck Creek @ Hwy 4 subwatershed are targeted for additional focused outreach (Table 18). Initial and follow up surveys were completed in 2009 and 2010 by two of the three targeted members for parcels currently enrolled. Two of the permittees associated to these members were not contacted previously.

Two additional growers representing 264 acres in the Lone Tree Creek @ Jack Tone Rd subwatershed are targeted for outreach in 2012 due to their continued use of chlorpyrifos in 2010 and/or 2011 (Table 18). Both growers were contacted in the past to complete initial and follow up surveys; however, PUR data indicated that the growers continued to apply chlorpyrifos in 2010.

Four additional growers representing five members and 1,633 acres in the Unnamed Drain to Lone Tree Creek @ Jack Tone Rd subwatershed are targeted for outreach in 2012 due to their continued use of chlorpyrifos in 2010 and/or 2011 (Table 18). Two of the growers were contacted in the past to complete surveys for 2008 practices; however, PUR data indicate that the growers continued to use chlorpyrifos in 2010. The remaining three growers are being contacted due to the Coalition expanding its outreach beyond initial targeted members.

In combination with the additional outreach efforts in 2010, the Coalition is confident that the additional focused outreach in 2012 will result in improved water quality in all three first priority subwatersheds. A summary of the newly implemented practices from contacts made in 2012 will be included in the 2013 MPUR.

Table 18. 2012 Additional contacts for first priority subwatersheds.

Subwatershed	Count of Permittees	Count of Members	Sum of Acreage
Duck Creek @ Hwy 4			
Previously Contacted in 2009	1	2	363
Not Previously Contacted	2	1	200
Lone Tree Creek @ Jack Tone Rd			
Previously Contacted in 2009	2	2	264
Not Previously Contacted	0	0	0
Unnamed Drain to Lone Tree Creek			
Previously Contacted in 2009	2	2	1321
Not Previously Contacted	2	3	312

SECOND PRIORITY SUBWATERSHEDS SUMMARY OF MANAGEMENT PRACTICES (2010-2012)

Focused outreach to document current management practices and track implementation of additional management practices in second priority subwatersheds began in 2010 and concluded in 2011. One hundred percent of targeted growers (members who were determined to have direct drainage, were currently farming and were applying pesticides of concern) completed surveys documenting current management practices and indicating management practices to be implemented in the following year (2010) in the Grant Line Canal @ Clifton Court Rd (2 growers), Grant Line Canal @ Calpack Rd (2 growers), and Littlejohns Creek @ Jack Tone Rd (16 growers) subwatersheds (Table 10). The management practice surveys focused primarily on pesticide application management and runoff management. Based on survey results, the Coalition reported an analysis of current practices from 2009 as well as practices to be implemented in 2010 in the 2011 MPUR (pages 59-71).

Follow up contacts are completed with all targeted growers in the second priority subwatersheds who indicated that they intended to implement a new practice in 2010 (no new practices were planned for 2011). As a part of each contact, growers completed individual follow up surveys to record newly implemented management practices. The Coalition reported a full evaluation of newly implemented management practices for all second priority subwatersheds in the 2011 MPUR.

Water quality impairments continued in Littlejohns Creek through 2011. The Coalition targeted additional growers that will be contacted in 2012 within the Littlejohns Creek @ Jack Tone Rd subwatershed. These growers were selected for additional outreach based on the same five factors mentioned for additional contacts in the first priority subwatersheds.

Similar topics will be discussed during additional focused outreach in the Littlejohns Creek subwatershed as in the first priority subwatersheds including managing storm and irrigation runoff (including improving water infiltration, capturing and/or recycling runoff water, and treating runoff with Landguard or PAM), reducing drift to water sources (including noting application conditions, equipment, product choice, buffer zones, and application method) and discontinuing, reducing, or changing the type of pesticide used. The Coalition anticipates that this new focused outreach strategy will improve water quality in Littlejohns Creek. A summary of the newly implemented practices resulting from contacts made in 2012 will be included in the 2013 MPUR.

THIRD PRIORITY SUBWATERSHEDS SUMMARY OF MANAGEMENT PRACTICES (2011-2013)

Focused outreach to document current management practices and track implementation of additional management practices in third priority subwatersheds began in 2011 and is scheduled to continue through 2013. The third priority subwatersheds are French Camp Slough @ Airport Way, Mokelumne River @ Bruella Rd and Terminous Tract Drain @ Hwy 12. The Coalition completed initial contacts with all targeted growers (members who were determined to have direct drainage, were currently farming and were applying pesticides of concern) in the third priority subwatersheds. One hundred percent of targeted growers completed surveys documenting current and recommended management practices in French Camp Slough @ Airport Way (13 growers), Mokelumne River @ Bruella Rd (12 growers) and Terminous Tract Drain @ Hwy 12 (4 growers) subwatersheds (Table 11). The management practice surveys focused primarily on pesticide application management and runoff management. The Coalition provides a final analysis of current practices from 2010 in the following sections.

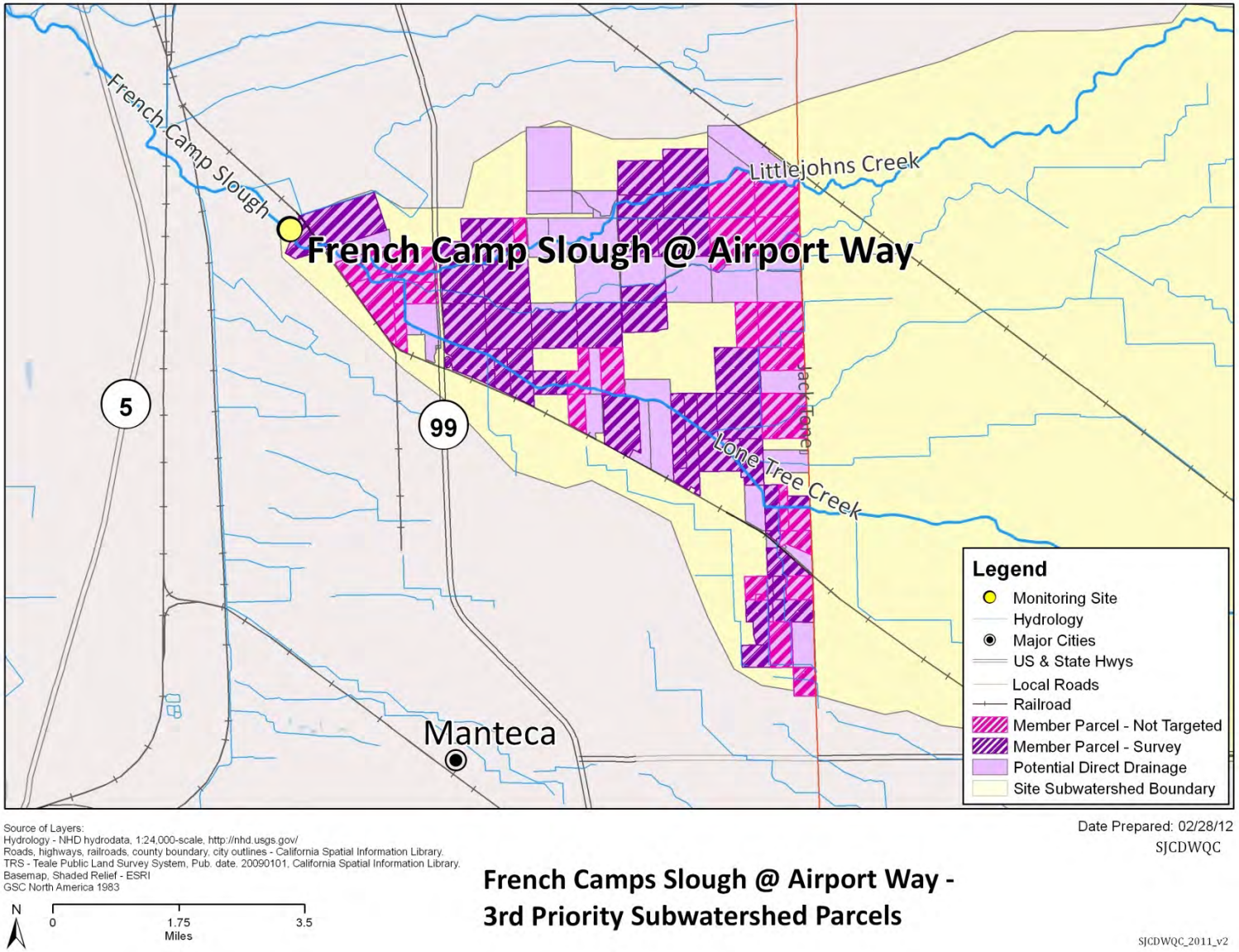
Follow up contacts with growers who indicated that they intended to implement additional practices in 2011 were initiated in January 2012 through postcard mailings. As a part of each contact, growers completed individual follow up surveys to record newly implemented management practices. The Coalition provides a preliminary evaluation of newly implemented management practices for all third priority subwatersheds in the following sections. The remaining growers who have not returned the mailer will receive follow up via e-mail or phone in 2012. Growers who were unable to implement intended practices in 2011, but anticipate implementation in 2012, will be contacted in the winter of 2013. A complete analysis of newly implemented practices from 2011 will be provided in the 2013 MPUR.

The summaries of management practices indicate the percentages of a particular management practice which is calculated as the acres associated with each management practice compared to the total acres for all management practices (referred to as percent of acres with recorded practices).

French Camp Slough @ Airport Way

Between 2011 and 2012, 13 members representing 3,767 acres (45% of the direct drainage area, Table 11) completed surveys with current management practice information (Figure 8). Grower meetings were conducted in 2011 and 100% of targeted members returned surveys with current management practice information. All 13 growers indicated that they intended to implement new management practices in 2011, and follow up surveys were sent to all growers in January 2012.

Figure 8. French Camp Slough @ Airport Way member parcels with direct drainage potential.



Summary of Current Management Practices (2010)

Of the 3,767 targeted member acres represented by the management practice surveys, 28% of acres with recorded practices have irrigation runoff leaving the field, and 53% of acres with recorded practices have storm water runoff leaving the field (Figure 9). As indicated in Figure 10, the two most common management practices used in the French Camp Slough subwatershed in 2010 were reducing runoff water volumes by irrigation management (34% of acres with recorded practices) and reducing the use of pesticide of concern (32% of acres with recorded practices). Other management practices currently in place include installation of sprinkler or micro irrigation (18% of acres with recorded practices), use of center grass rows, grass waterways, or grass filter strips (15% of acres with recorded practices) and installation of retention pond, holding basin, or return systems (1% of acres with recorded practices). In 2010, 100% of targeted members had one or more management practices currently in place that were specific to runoff management and/or pesticide application management.

Figure 9. French Camp Slough targeted member acreage with irrigation or storm runoff.

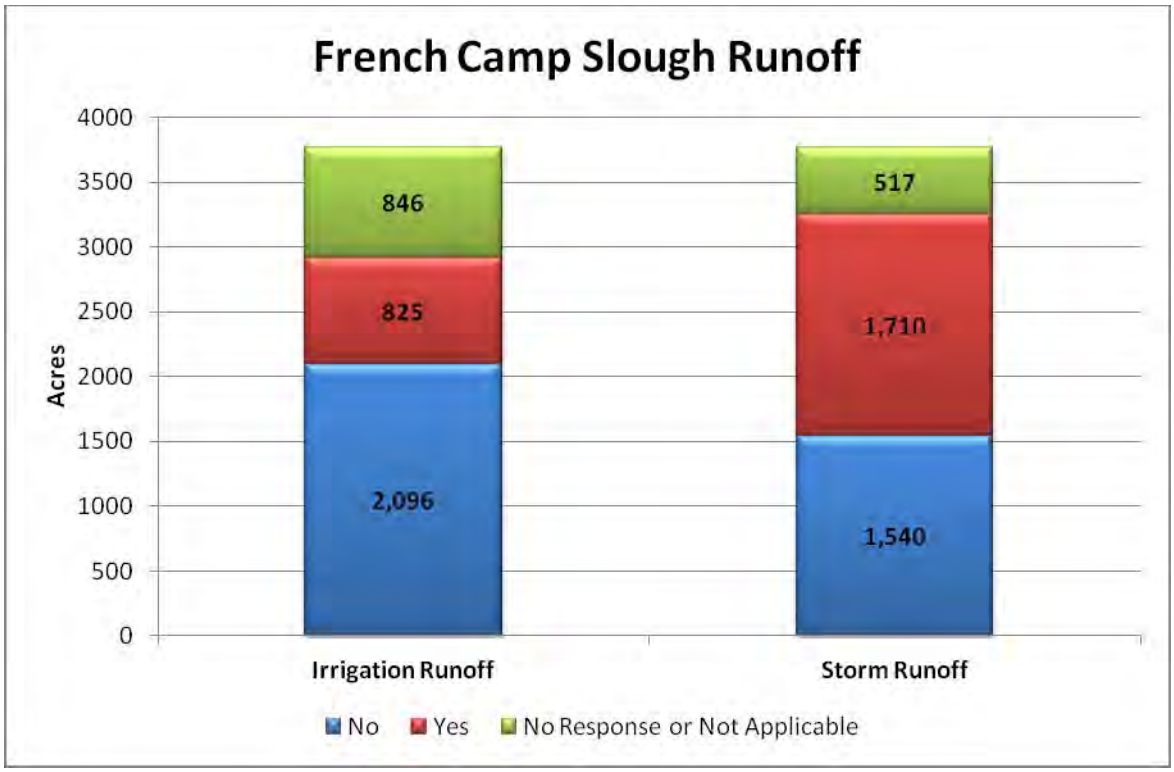
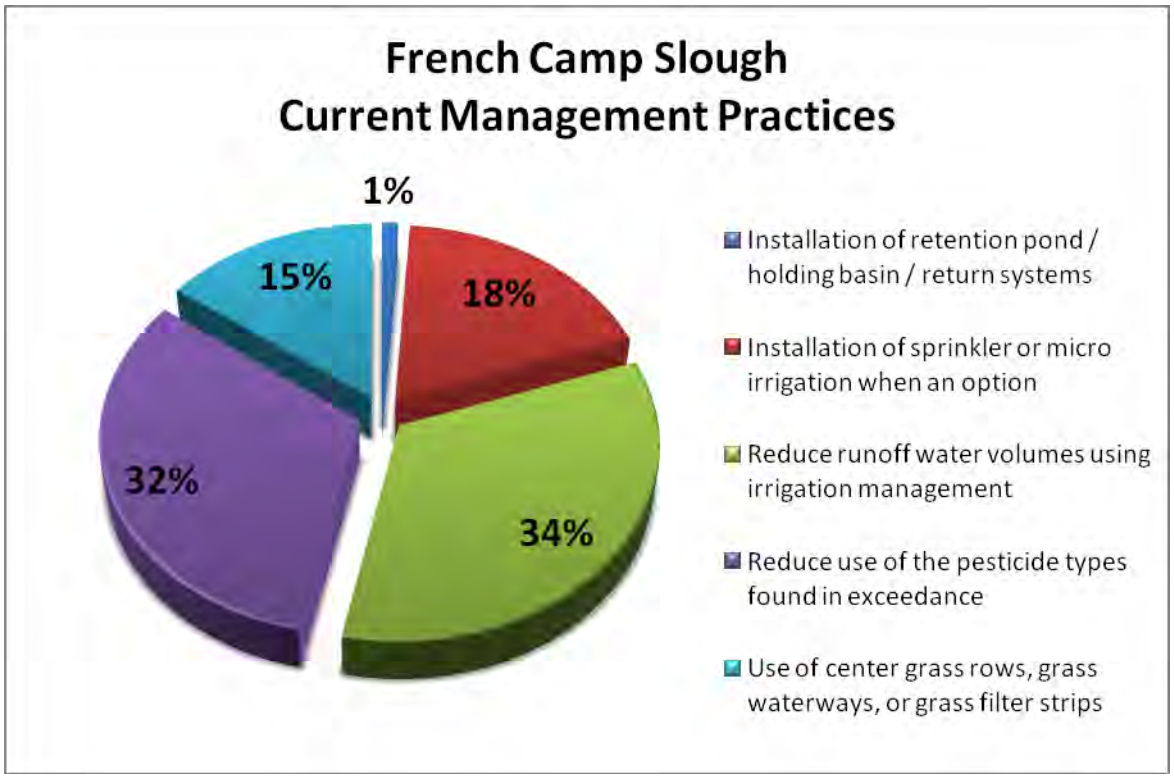


Figure 10. French Camp Slough current management practices (implemented in 2010).

Percentage based on acreage associated with a specific practice compared to the summed acreage associated with all practices.

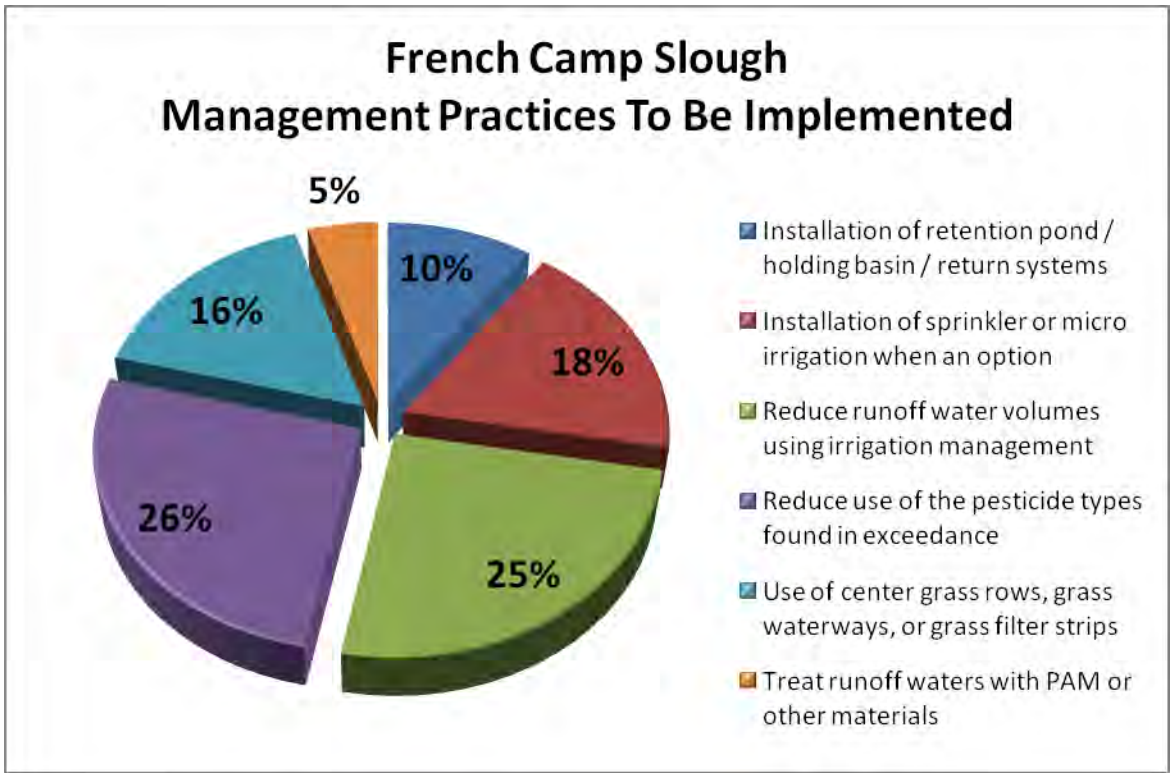


Summary of Management Practices to Be Implemented (2011)

All growers indicated that they planned to implement at least one of the six recommended practices in 2011 (Figure 11). The most common practices planned for 2011 were reduced use of pesticides of concern (26% of acres with recorded practices) and reduced runoff water volumes (25% of acres with recorded practices). Targeted growers are also planning installation of sprinklers or micro irrigation systems (18% of acres with recorded practices) and use of center grass rows, grass waterways, or grass filter strips (16% of acres with recorded practices). The two remaining recommended practices (installation of retention pond, holding basin, or return systems and treating runoff waters with PAM or other materials) are planned for 10% and five percent of acres with recorded practices, respectively.

Figure 11. French Camp Slough management practices to be implemented in 2011.

Percentage based on acreage associated with a specific practice compared to the summed acreage associated with all practices.



Summary of Implemented Management Practices - Preliminary (2011/2012)

Table 19 lists the acreages of management practices to be implemented and newly implemented management practices for the French Camp Slough @ Airport Way subwatershed. The most common practice implemented during 2011 was reducing use of pesticides of concern (Table 19). Other implemented practices include reducing runoff water volumes using irrigation management, using center grass rows, grass waterways or grass filter strips, installation of a retention pond, holding basin, or return system, and installation of sprinkler or microspray irrigation (Table 19).

Two growers indicated they planned to use PAM to treat runoff waters in 2011. One of these two growers has yet to return their follow up survey; the other indicated that they implemented practices to prevent any runoff from leaving their field; therefore the use of PAM was no longer necessary. One member representing 993 acres had planned to install a retention pond; however they installed drip systems on all crops and no longer needed a retention pond. Additionally, one grower with 58 acres indicated they implemented additional practices not specifically recommended by the Coalition (applying pesticides under safe weather conditions). Three growers representing 1,756 targeted member acres have yet to respond to the follow up survey. Final results of practices implemented in 2011 will be reported in the 2013 MPUR.

Table 19. Acreage of practices (to be implemented and implemented) in the French Camp Slough @ Airport Way subwatershed. Results are based on initial surveys and follow up surveys.

Management Practice	Acreage: Practice To Be Implemented In 2011	Acreage: Newly Implemented Practice In 2011†	Percent of Newly Implemented Practices*
Installation of retention pond / holding basin / return systems	1335	205	15%
Installation of sprinkler or micro irrigation when an option	2469	1559	63%
Reduce runoff water volumes using irrigation management	3442	1747	51%
Reduce use of the pesticide types found in exceedance	3562	1806	51%
Use of center grass rows, grass waterways, or grass filter strips	2216	1303	59%
Applying pesticides under safe weather conditions	0	58	NA

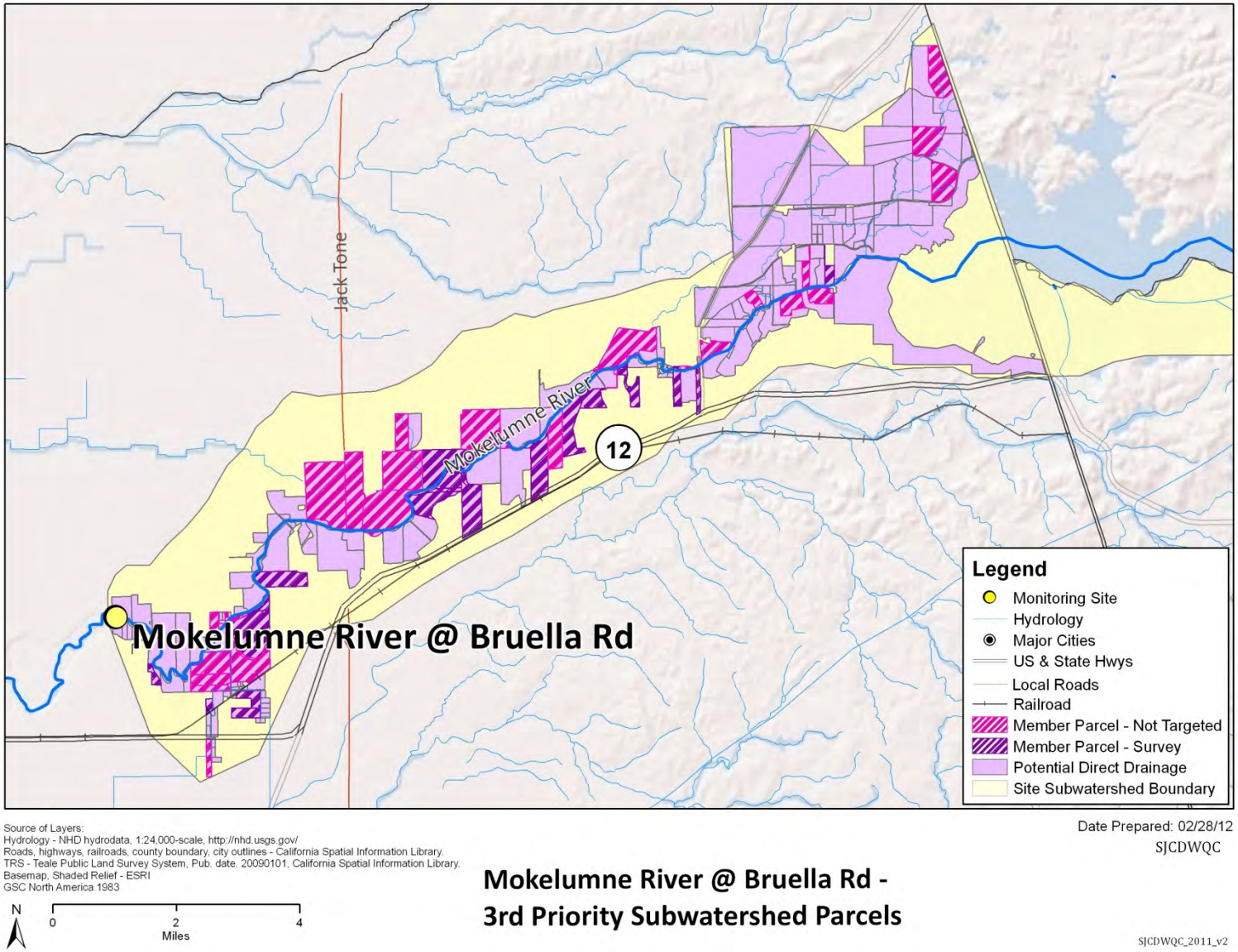
†Preliminary results only

*Percents are preliminary and are based on practices to be implemented in 2011.

Mokelumne River @ Bruella Rd

Between 2011 and 2012, 12 members representing 937 acres (10% of the direct drainage area, Table 11) completed surveys with current management practice information (Figure 12). Grower meetings were conducted in 2011 and 100% of targeted members returned surveys with current management practice information. Follow up surveys were sent in January 2012 to the 11 growers that indicated that they intended to implement new management practices in 2011.

Figure 12. Mokelumne River @ Bruella Rd member parcels with direct drainage potential.



Summary of Current Management Practices (2010)

Of the 937 targeted member acres represented by management practice surveys, zero acres have irrigation runoff; however 23% of acres with recorded practices have storm water runoff (Figure 13). The most common management practices in the Mokelumne River subwatershed in 2010 were use of center grass rows, grass waterways, or grass filter strips (32% of acres with recorded practices; Figure 14). Other management practices currently in place include reducing the use of pesticide of concern (28% of acres with recorded practices), reducing runoff volumes using irrigation management (25% of acres with recorded practices), and installation of sprinkler or micro irrigation (15% of acres with recorded practices). In 2010, 100% of targeted members had one or more management practices that were specific to runoff management and/or pesticide application management.

Figure 13. Mokelumne River targeted member acreage with irrigation or storm runoff.

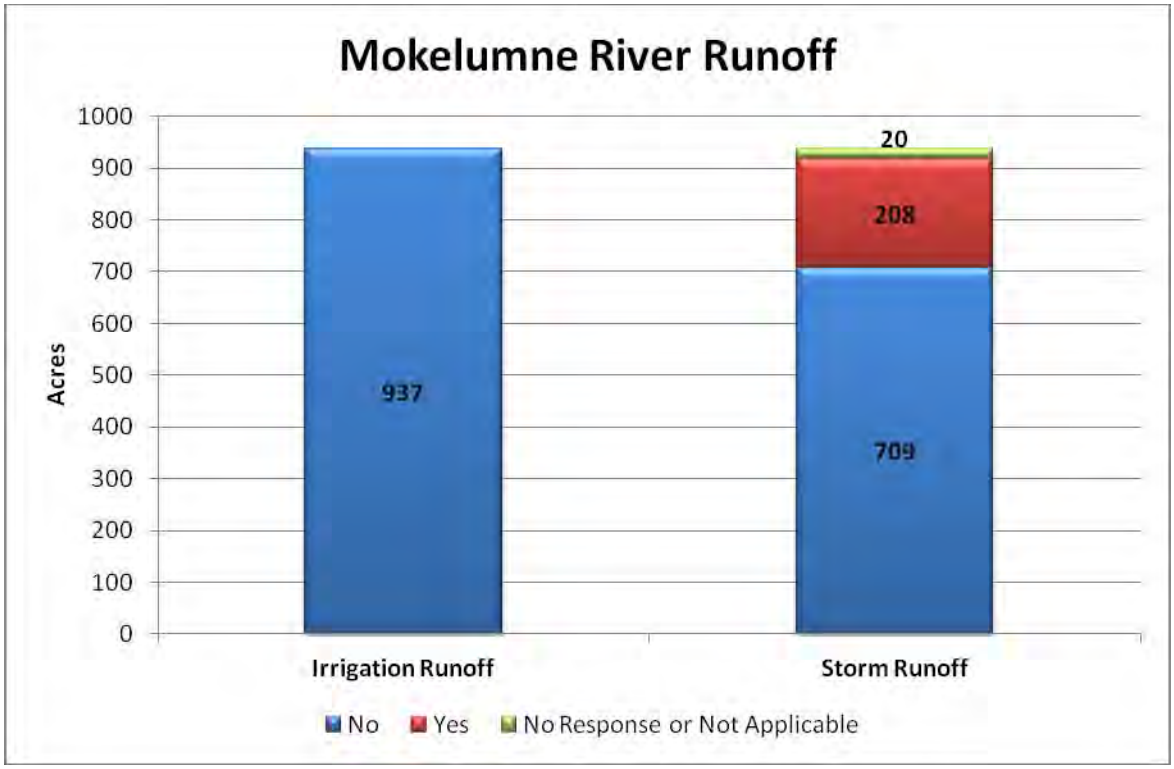
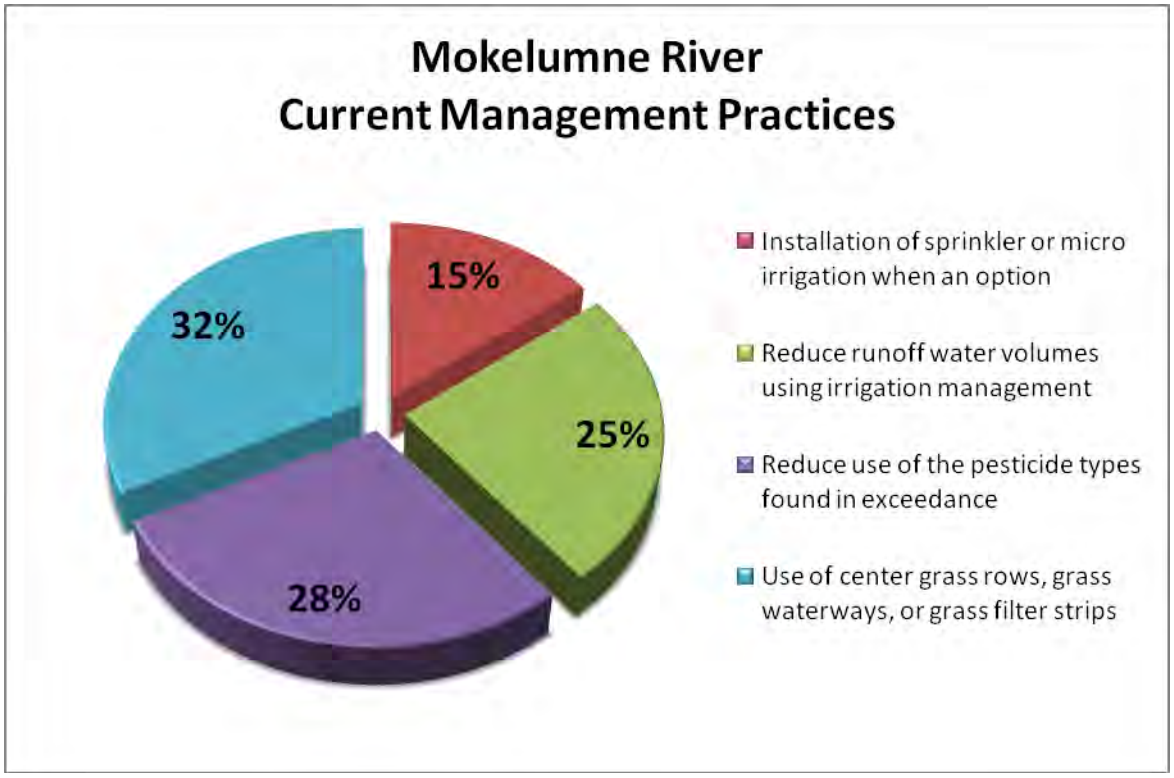


Figure 14. Mokelumne River current management practices (implemented in 2010).

Percentage based on acreage associated with a specific practice compared to the summed acreage associated with all practices.

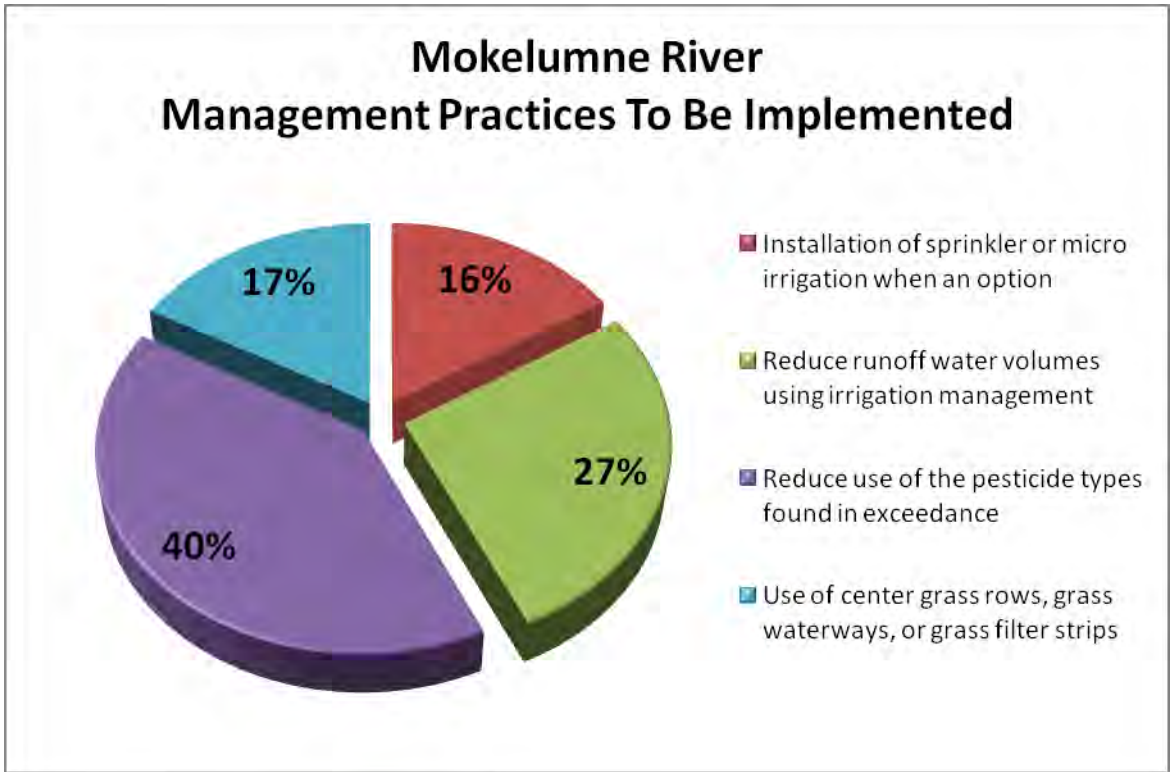


Summary of Management Practices to Be Implemented (2011)

Eleven of the 12 targeted growers (92%) in the Mokelumne River subwatershed indicated that they intended to implement additional practices in 2011. The grower who did not plan to implement new practices in 2011 has taken measures to insure runoff will not leave their field (including when the river floods); they also use minimal pesticides and spot treat their vineyards to control spray drift. Four recommended management practices were planned to be implemented by at least one grower (Figure 15). The most common practice planned for 2011 was reducing the use of pesticides of concern (40% of acres with recorded practices). Other practices planned for 2011 include reducing runoff volume (27% of acres with recorded practices), installation of sprinklers or micro irrigation systems (16% of acres with recorded practices), and use of center grass rows, grass waterways, or grass filter strips (17% of acres with recorded practices).

Figure 15. Mokelumne River management practices to be implemented in 2011.

Percentage based on acreage associated with a specific practice compared to the summed acreage associated with all practices.



Summary of Implemented Management Practices - Preliminary (2011/2012)

Table 20 lists the acreages of management practices to be implemented and newly implemented management practices for the Mokelumne River @ Bruella Rd subwatershed. The most common practice implemented in 2011 was reduced use of pesticides of concern (Table 20). Other implemented practices include reducing runoff volume, using center grass rows, grass waterways or grass filter strips, installation of a retention pond, holding basin, or return system, and installation of sprinkler or microspray irrigation. Additionally, one grower with 369 acres indicated that they implemented additional practices not specifically recommended by the Coalition (no till cover cropping). Three growers representing 139 targeted member acres have yet to respond to the follow up survey; final results of practices implemented in 2011 will be reported in the 2013 MPUR.

Table 20. Acreage of practices (to be implemented and implemented) in the Mokelumne River @ Bruella subwatershed. Results are based on initial surveys and follow up surveys.

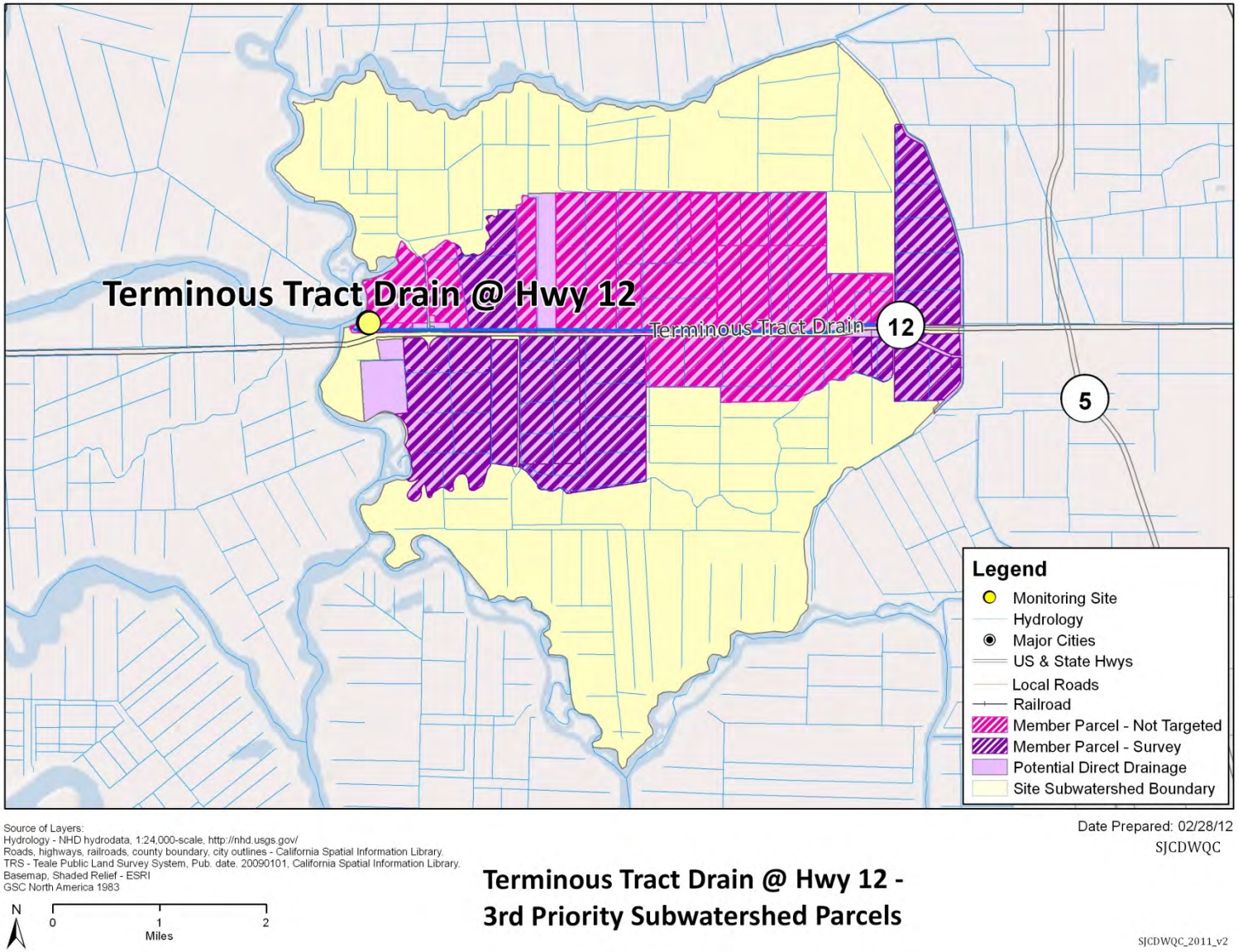
Management Practice	Acreage: Practice To Be Implemented In 2011	Acreage: Newly Implemented Practice In 2011†	Percent of Newly Implemented Practices*
Installation of sprinkler or micro irrigation when an option	336	172	51%
Reduce runoff water volumes using irrigation management	569	529	93%
Reduce use of the pesticide types found in exceedance	867	759	88%
Use of center grass rows, grass waterways, or grass filter strips	336	170	51%
No till cover cropping	0	369	NA

†Preliminary results only
*Percents are preliminary and are based on practices to be implemented in 2011.

Terminous Tract Drain @ Hwy 12

Four members representing 1,778 acres (40% of the direct drainage area, Table 11) were contacted by the Coalition in 2011 to complete surveys of current management practices (Figure 16). Grower meetings were conducted during 2011 and 100% of targeted members returned surveys with current management practice information. All four growers indicated that they intended to implement new management practices in 2011; follow up surveys were sent to all growers in January 2012.

Figure 16. Terminous Tract Drain @ Hwy 12 member parcels with direct drainage potential.



Summary of Current Management Practices (2010)

All four members who completed surveys, representing 1,778 irrigated acres, indicated that they had tailwater runoff. One member with 29% of the acres reported having storm water runoff (Figure 17). The most common management practice in 2010 in the Terminous Tract Drain subwatershed (Figure 18) was using less pesticides of concern (29% of acres with recorded practices). Other management practices currently in place include installation of sprinkler or microspray irrigation (21% targeted acres), reducing runoff volume (21% of acres with recorded practices), installation of a retention pond, holding basin or return system (21% of acres with recorded practices), and use of center grass rows, grass waterways, or grass filter strips (8% of acres with recorded practices). In 2010, 100% of targeted members had one or more management practices that were specific to runoff management and/or pesticide application management.

Figure 17. Terminous Tract Drain targeted member acreage with irrigation or storm runoff.

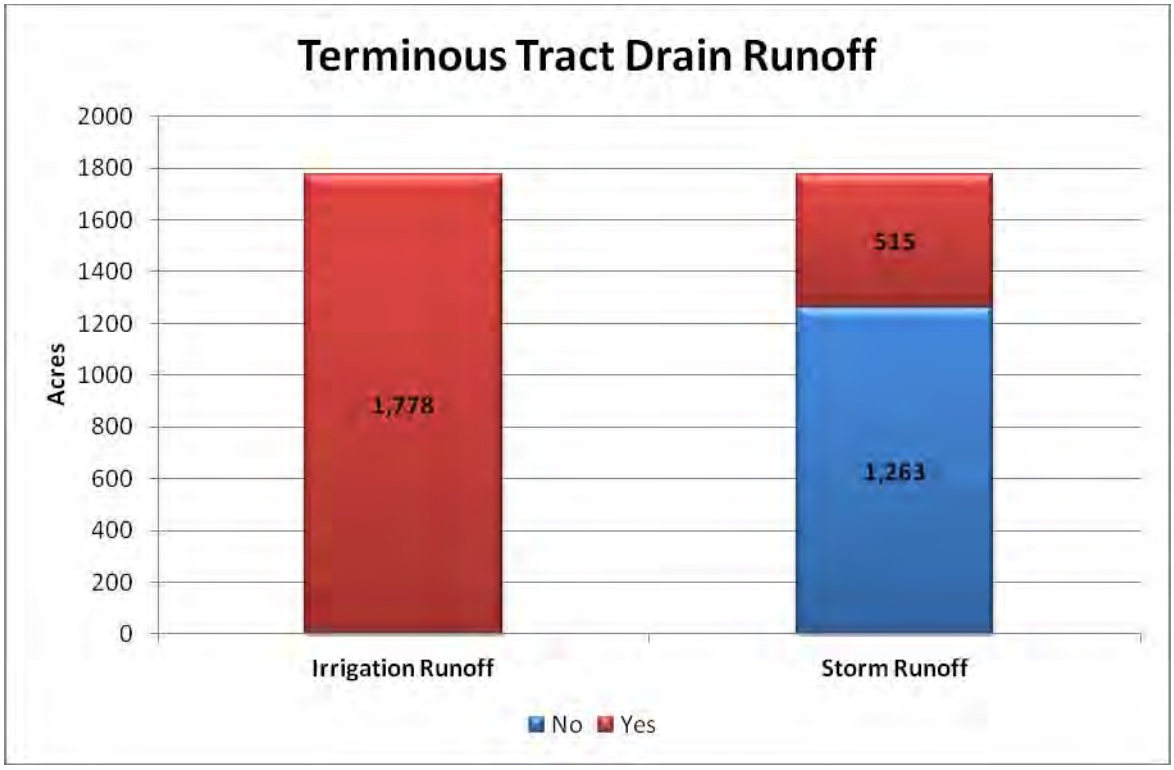
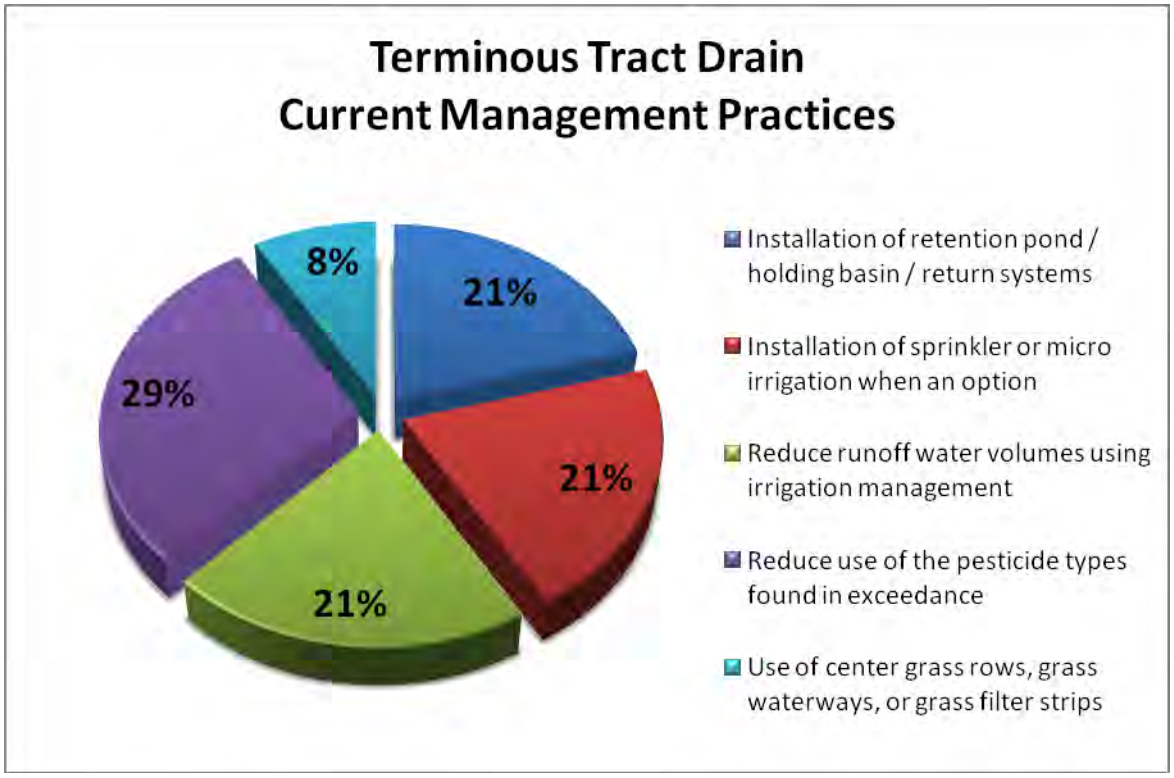


Figure 18. Terminous Tract Drain current management practices (implemented in 2010).

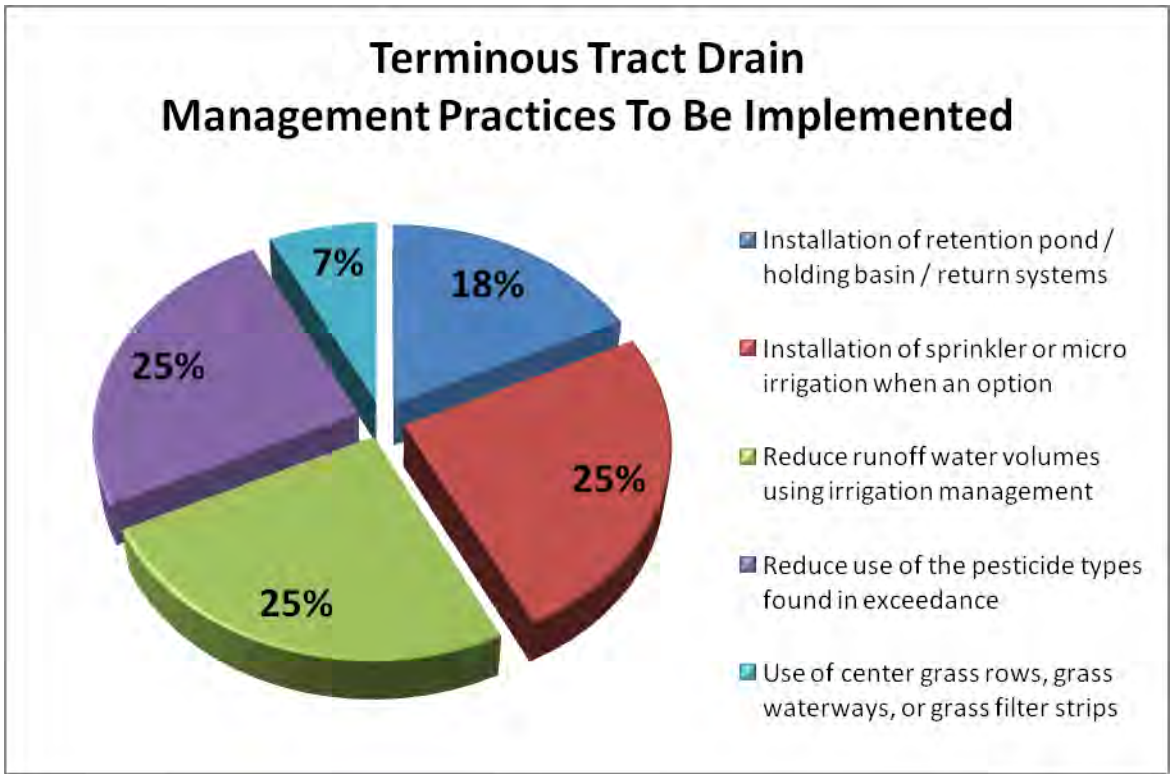
Percentage based on acreage associated with a specific practice compared to the summed acreage associated with all practices.



Summary of Management Practices to Be Implemented (2011)

One hundred percent of targeted growers in the Terminous Tract Drain subwatershed indicated that they intended to implement additional practices in 2011. Five of the six recommended management practices were planned to be implemented by at least one grower (Figure 19). The three most common practices planned for 2011 were reducing runoff water volumes by using irrigation management (25% of acres with recorded practices), reducing the use of pesticides of concern (25% of acres with recorded practices), and installation of sprinklers or micro irrigation systems (25% of acres with recorded practices). Other management practices planned were installation of a retention pond, holding basin, or return systems are planned (18% of acres with recorded practices) and use of center grass rows, grass waterways, or grass filter strips (7% of acres with recorded practices).

Figure 19. Terminous Tract Drain management practices to be implemented in 2011.
Percentage based on acreage associated with a specific practice compared to the summed acreage associated with all practices.



Summary of Implemented Management Practices - Preliminary (2011/2012)

Table 21 lists the acreages of management practices to be implemented and newly implemented management practices for Terminous Tract Drain @ Hwy 12. The most common practice implemented in 2011 was reducing runoff water volume (Table 21). Other implemented practices include center grass rows, grass waterways or grass filter strips and installation of sprinkler or microspray irrigation. The two growers who returned follow up postcards did not reduce the use of pesticides of concern in 2011, presumably because they implemented practices to prevent runoff from leaving their fields. Tailwater management practices are a priority. Two growers representing 859 targeted member acres have yet to respond to the follow up survey; final results of practices implemented in 2011 will be reported in the 2013 MPUR.

Table 21. Acreage of practices (to be implemented and implemented) in the Terminous Tract Drain @ Hwy 12 subwatershed. Results are based on initial surveys and follow up surveys.

Management Practice	Acreage: Practice To Be Implemented In 2011	Acreage: Newly Implemented Practice In 2011†	Percent of Newly Implemented Practices*
Installation of retention pond / holding basin / return systems	1263	0	0%
Installation of sprinkler or micro irrigation when an option	1778	404	23%
Reduce runoff water volumes using irrigation management	1778	918	52%
Reduce use of the pesticide types found in exceedance	1778	0	0%
Use of center grass rows, grass waterways, or grass filter strips	515	515	100%

†Preliminary results only

*Percents are preliminary and are based on practices to be implemented in 2011.

FOURTH PRIORITY SUBWATERSHEDS SUMMARY OF MANAGEMENT PRACTICES (2012-2014)

Focused outreach to document current management practices and track implementation of additional management practices in fourth priority subwatersheds began in 2012 and is scheduled to continue through 2014. The fourth priority subwatersheds are Kellogg Creek along Hoffman Ln, Mormon Slough @ Jack Tone Rd, and Sand Creek @ Hwy 4 Bypass. The Coalition initiated outreach with targeted growers (members who were determined to have direct drainage or were within 200 yards of the waterbody, were currently farming and were applying pesticides of concern) in the Kellogg Creek along Hoffman Ln (11 growers), Mormon Slough @ Jack Tone Rd (34 growers) and Sand Creek @ Hwy 4 Bypass (1 grower) subwatersheds by way of grower meetings held in January 2012. Surveys of current management practices will be summarized in the 2013 MPUR. Follow up contacts with growers who indicate on their survey that they will implement additional practices will take place in early 2013. A final analysis of the fourth priority subwatersheds management practices from 2011 will be included in the 2013 MPUR.

Kellogg Creek along Hoffman Ln

Eleven members representing 412 acres (8% direct drainage acreage) are scheduled to complete surveys with current management practice information. A grower meeting was conducted in January 2012 and surveys are in the process of being completed and returned.

Mormon Slough @ Jack Tone Rd

Thirty-four members representing 2,050 acres (49% direct drainage acreage) are scheduled to complete surveys with current management practice information. A grower meeting was conducted in January 2012 and surveys are in the process of being completed and returned.

Sand Creek @ Hwy 4 Bypass

A single member representing 116 acres (3% direct drainage acreage) was targeted for focused outreach in the Sand Creek @ Hwy 4 Bypass subwatershed. A meeting was conducted in January 2012 and the survey for this grower with current management practices was returned to the Coalition.

Management practices currently in place in the Sand Creek subwatershed include reducing or eliminating use of pesticides found in exceedance, installation of drip irrigation system, and reduction of runoff water volume. The grower in Sand Creek indicated that he intended to implement in 2012, five of the six specifically recommended practices. The grower plans to continue to work on eliminating the use of pesticides found in exceedance, installing sprinkler or drip irrigation systems, and reducing runoff water volume. In addition to improving these practices already in place in 2011, the grower plans to treat runoff with PAM if needed and is considering planting grass filter strips for 2012. Follow up will occur with this grower in early 2013 and results will be reported in the 2013 MPUR.

EVALUATION OF MANAGEMENT PRACTICE EFFECTIVENESS

The Coalition has implemented its management plan process for three years in the first priority subwatersheds and for two years in the second priority subwatersheds (Table 22). Therefore, a complete evaluation of management practice effectiveness will include these six subwatersheds. A preliminary evaluation of management plan effectiveness is included for the third priority subwatersheds based on preliminary follow up results; a complete evaluation will be included in the 2013 MPUR.

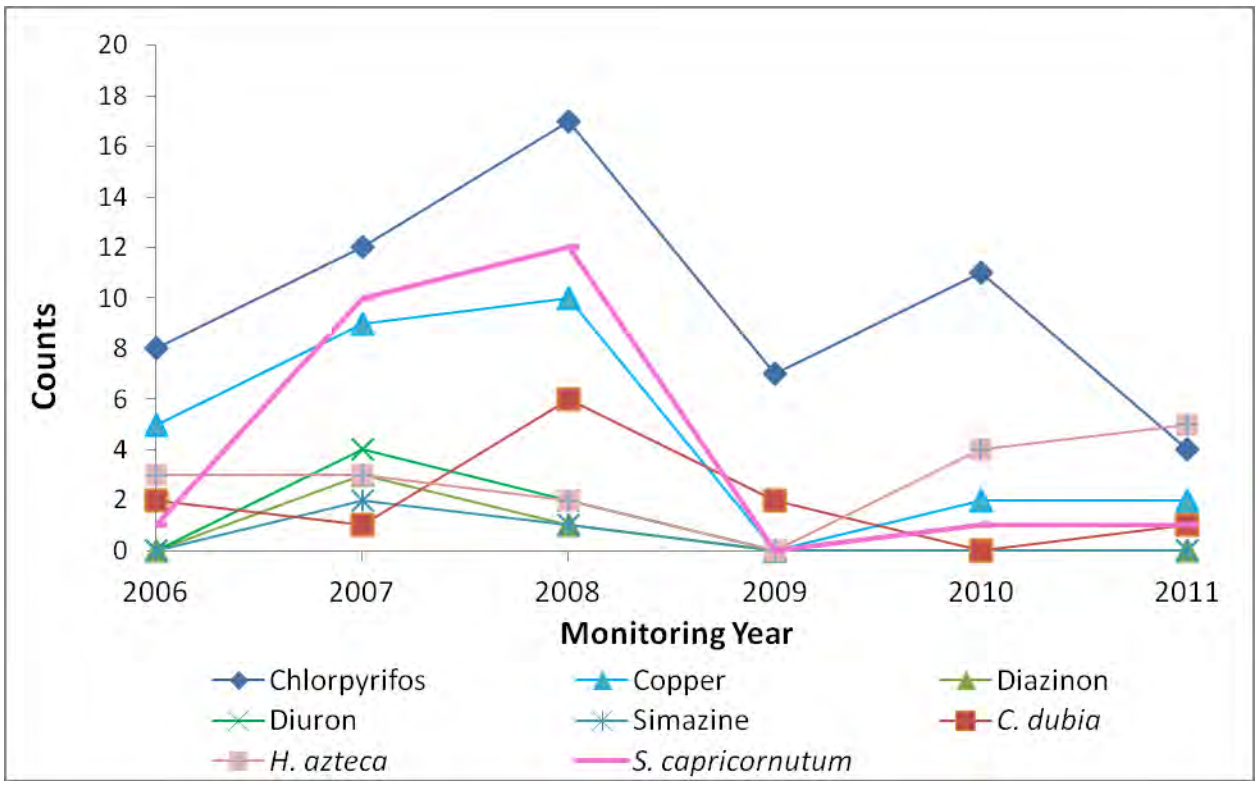
Starting in 2009, the Coalition started monitoring for the effectiveness of newly implemented management practices (Table 22). High priority management plan constituents monitored for management practice effectiveness include chlorpyrifos, copper, diazinon, diuron, simazine, *C. dubia* water column toxicity, *S. capricornutum* water column toxicity, and *H. azteca* sediment toxicity. Figure 20 demonstrates that there has been a reduction in the number of exceedances for a majority of these priority constituents in sites that have completed two years of water quality assessment for evaluation (first and second priority subwatersheds). The number of samples collected for these constituents across the first and second high priority subwatersheds has varied from year to year due to changes in MPM schedules and rotating of assessment and Core Monitoring constituents.

Table 22. Years of current management practice assessment, newly implemented management practices and water quality assessment for evaluating management practice effectiveness.

Priority Group	Current Management Practice Year	Year(s) of Newly Implemented Management Practices	Years of Water Quality Assessment for Evaluation
First Priority Subwatersheds			
Duck Creek @ Hwy 4	2008	2009, 2010	2009, 2010, 2011
Lone Tree Creek @ Jack Tone Rd	2008	2009, 2010	2009, 2010, 2011
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	2008	2009, 2010	2009, 2010, 2011
Second Priority Subwatersheds			
Grant Line Canal @ Clifton Court Rd	2009	2010	2010, 2011
Grant Line Canal near Calpack Rd	2009	2010	2010, 2011
Littlejohns Creek @ Jack Tone Rd	2009	2010	2010, 2011
Third Priority Subwatersheds			
French Camp Slough @ Airport Way	2010	2011†	2011
Mokelumne River @ Bruella Rd	2010	2011†	2011
Terminous Tract Drain @ Hwy 12	2010	2011†	2011

†Preliminary results only.

Figure 20. Number of exceedances of high priority constituents and toxic samples from 2006 through 2011 in first and second priority subwatersheds.



FIRST PRIORITY SUBWATERSHEDS (2008-2010)

An evaluation of the first group of priority subwatersheds was completed by the scheduled deadlines in April 2010 and April 2011 (Tables 8 and 9). A complete evaluation of management practice effectiveness was submitted in the 2011 MPUR; however, due to continued exceedances of the WQTL for chlorpyrifos, MPM and additional outreach is ongoing. Additional outreach began in the Duck Creek @ Hwy 4 subwatershed in 2010 and included individual meetings with growers who used chlorpyrifos in 2009 and farm adjacent to Duck Creek. The results of the additional focused outreach in Duck Creek are outlined in the previous section. Sixty-three out of 110 targeted growers (57%) within the first group of high priority subwatersheds implemented new management practices in 2009 or 2010 (Table 23). A total of 10,284 acres (62% of the targeted acreage) farmed by targeted growers implemented at least one of the recommended management practices in 2009 or 2010 (Table 23).

Table 23. First priority percentage of implemented management practices based on irrigated acres and number of members contacted.

	Duck Creek @ Hwy 4		Lone Tree Creek @ Jack Tone Rd	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Total[2]
	Initial Contacts	Additional Focused Outreach[1]	Initial Contacts	Initial Contacts	
# of Targeted Members	35	12[1]	43	34	**110**
# Members with New Practices	19	9[1]	17	18	**63**
Percent of Contacted Members with New Practices	51%	75%[1]	40%	53%	**57%**
Acreage of Targeted Members	4,978	2,552[1]	3,742	6,463	**16,515**
Acreage with New Practices	2,425	2,053[1]	1,923	3,934	**10,284**
Percent of Targeted Acreage with New Practices	49%	80%[1]	51%	61%	**62%**

[1]Of the 12 members to receive additional focused outreach in 2010, four had not previously received outreach; eight began implementing management practices after the individual meeting; one added additional management practices to those already implemented in 2009 (representing 51 acres).
[2]The acreages and counts of all members are counted only once in the 'total' column, even if they are represented in more than one subwatershed or were contacted more than once.

Newly implemented practices (management practices implemented after Coalition outreach and surveys) occurred over 62% of the targeted subwatershed acreage (Table 23). These practices include reducing the use of pesticides of concern such as chlorpyrifos, reducing runoff of water volume, implementing center grass rows, grass waterways or grass filter strips, installing retention pond or holding basin, and installing sprinkler or micro spray irrigation (Table 24). When evaluating management practices and the acreage associated with them, a parcel may be included under multiple management practices. Table 24 can be used to evaluate number of acres with a particular practice within the targeted direct drain acreage of the subwatershed or in relation to another management practice. The most common new practice implemented was reducing the use of pesticide types found in exceedance; generally, this pesticide was chlorpyrifos (Table 24).

Table 24. First priority subwatershed acreage with newly implemented management practices.

Management Practice	Duck Creek @ Hwy 4 (4,978 targeted acres)	Lone Tree Creek @ Jack Tone Rd (3,742 targeted acres)	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd (6,463 targeted acres)	Sum of Acreage with Newly Implemented Management Practices	Percent of Targeted Acreage
Installation of retention pond / holding basin / return systems	0	316	298	614	4%
Installation of sprinkler or micro irrigation when an option	542	1314	2456	4312	28%
Reduce runoff water volumes using irrigation management	760	1259	1612	3631	24%
Reduce use of the pesticide types found in exceedance	4195*	1424	2085	7704	51%
Use of center grass rows, grass waterways, or grass filter strips	1267	106	251	1624	11%

*Includes 2,053 member parcel acres with new practices implemented in 2010 following additional focused outreach.

The results from individual contacts and follow up surveys indicated that implementation of more expensive practices, such as the installation of a retention pond or holding basin might not have been an option to many growers due to financial constraints. The Coalition will continue its strategy of notifying its members about available funding opportunities and encourage them to take advantage of the application process (which is discussed in more detail under the Coalition Wide Evaluation section). Despite the lack of resources to implement more expensive management practices, growers demonstrated their understanding of the causes of water quality impairments and their commitment to eliminating agriculturally-related impairments by implementing more affordable management practices (such as reducing runoff water volume). The Coalition's focused outreach strategy has been successful at informing growers of local water quality concerns and at influencing growers to actively address these concerns by implementing new management practices.

MPM results in the first priority subwatersheds indicate that these newly implemented management practices are effective in reducing agricultural induced water quality impairments. Focused outreach, including individual meetings with targeted growers, began in the first priority subwatersheds in the fall of 2008. The Coalition initiated MPM for high priority constituents during months of past exceedances in the first priority subwatersheds in 2009. Results from MPM in years during or after focused outreach (2009-2011) indicate a significant decrease in water quality impairments due to high priority constituents compared to years before growers implemented additional management practices (Tables 25-27). Monitoring from all three first priority sites demonstrates two or more consecutive years of monitoring with no exceedances of particular constituents. The Coalition submitted a letter to the Regional Board on January 6, 2012 petitioning to remove constituents from the management plan of Duck Creek @ Hwy 4 (pH, diazinon, and *S. capricornutum* toxicity), Lone Tree Creek @ Jack Tone Rd (SC, copper, diazinon, diuron, *S. capricornutum* toxicity and *H. azteca* sediment toxicity), and Unnamed Drain to Lone Tree Creek @ Jack Tone Rd (diuron, simazine, and *C. dubia* and *S. capricornutum* toxicity).

Chlorpyrifos

Chlorpyrifos is a high priority constituent for all three of the first priority subwatersheds. During focused outreach with growers, the Coalition discussed the importance of irrigation management to reduce runoff into the creek and encouraged growers to eliminate spray drift. The majority of targeted growers in the first priority subwatersheds implemented practices to prevent chlorpyrifos from entering the waterway, most notably reducing use of the products containing chlorpyrifos (Table 24). Despite continued outreach through 2011, exceedances of the chlorpyrifos WQTL continued in 2011. While water quality impairments due to chlorpyrifos use continued in the first priority subwatersheds, it should be noted that the percent of exceedances in relation to the number of samples taken in a given year has decreased by two thirds since the Coalition began its focused outreach in 2009 (Table 25). Furthermore, PUR data indicate that the use of chlorpyrifos is steadily decreasing across the first priority subwatersheds (Table 25). The Coalition is expanding its focused outreach to additional growers in 2012 based on the criteria outlined in the First Priority Subwatersheds Summary of Management Practices section of this report. The Coalition also reviewed use of chlorpyrifos with the most recent PUR data available, and many growers within the first priority subwatersheds who consistently use of chlorpyrifos are not currently enrolled in the Coalition. The Coalition believes that if water quality impairments due to chlorpyrifos continue within the first priority subwatersheds after additional outreach in 2012 that growers not enrolled in the Coalition could be the cause of the exceedances. Chlorpyrifos is scheduled for MPM at all first priority sites in 2012, with at least one site being monitored during all months except March and October.

Diazinon

Diazinon is a high priority constituent for the Duck Creek @ Hwy 4 and Lone Tree Creek @ Jack Tone Rd management plans. Since the onset of focused outreach in these subwatersheds which began in 2009, there have been no exceedances of diazinon (Table 25). The PUR data also indicate growers are applying less diazinon than in the past (Table 25). The Coalition believes that management practices implemented as a result of focused outreach have contributed to improvements in water quality related to diazinon. Diazinon is scheduled for MPM at Lone Tree Creek and Duck Creek in 2012 during January and February.

Table 25. Count of exceedances and samples collected for chlorpyrifos and diazinon in first priority subwatersheds.

	Chlorpyrifos				Diazinon			
Year	Exceedance count	Samples[1]	% Exceedance	Lbs Applied	Exceedance count	Samples[1]	% Exceedance	Lbs Applied
2006	6	19	32%	20,776	0	19	0%	2,282
2007	8	29	28%	17,263	2	24	8%	1,036
2008	13	31	42%	9,950	1	24	4%	1,378
2009	7	15	47%	16,231	0	3	0%	515
2010	9	28	32%	10,966	0	24	0%	479
2011	3	21	14%	3,568[2]	0	6	0%	440[2]

[1] Refers to all samples scheduled for constituent analysis (dry sites are included).
[2]PUR data only available through May 2011 for San Joaquin County and November 2011 for Stanislaus County.

Copper

Copper is a high priority constituent in the Lone Tree Creek @ Jack Tone Rd and Unnamed Drain to Lone Tree Creek @ Jack Tone Rd management plans. Since the Coalition began focused outreach to improve the water quality impairments caused by copper, there has been a significant decrease in the count and percentages of exceedances of the copper WQTL in first priority subwatersheds (Table 26). One exceedance of the copper WQTL in April 2010 and one in May 2011 (both from samples collected from Unnamed Drain to Lone Tree Creek) occurred as a result of MPM. The PUR data indicate that copper, although still widely used, is steadily decreasing in use over time (Table 26). The recent improvements in water quality concerning copper are most likely due to growers implementing management practices that prevent copper applications from entering the waterway via runoff or spray drift. While the Coalition plans to focus additional outreach during 2012 on chlorpyrifos use, a representative will be discussing all pesticides in use, including copper, to the additional targeted growers. The Coalition is hopeful that continued outreach and education to growers in San Joaquin County will result in improved water quality results in 2012. Copper is scheduled for MPM during 2012 at Unnamed Drain to Lone Tree Creek (April, May, and July-September) and Lone Tree Creek @ Jack Tone Rd (January, February, and July-September).

Diuron and Simazine

Simazine and diuron are in management plans for the Lone Tree Creek @ Jack Tone Rd and Unnamed Drain to Lone Tree Creek @ Jack Tone Rd subwatersheds. Since focused outreach and MPM started in 2009 for both simazine and diuron, there have been no exceedances (Table 26). From 2006 to 2011, simazine and diuron use within the first priority subwatersheds has decreased (Table 26). The Coalition believes that management practices implemented as a result of focused outreach have contributed to the improved water quality results in addition to less use of products containing simazine or diuron. Simazine and diuron MPM is schedule to occur at Lone Tree Creek and Unnamed Drain to Lone Tree Creek in 2012 during the months of January and February.

Table 26. Count of exceedances and samples collected for copper, diuron and simazine in first priority subwatersheds.

	Copper[1]				Diuron				Simazine			
Year	Exceedance count	Samples[2]	% Exceedance	Lbs Applied	Exceedance count	Samples[2]	% Exceedance	Lbs Applied	Exceedance count	Samples[2]	% Exceedance	Lbs Applied
2006	1	5	20%	93,644	0	15	0%	6,069	0	15	0%	8,539
2007	5	8	63%	79,448	4	24	17%	4,605	2	24	8%	8,522
2008	7	30	23%	63,125	2	24	8%	1,368	1	24	4%	5,059
2009	0	11	0%	80,561	0	3	0%	3,269	0	3	0%	8,434
2010	1	10	10%	67,789	0	4	0%	1,355	0	2	0%	4,272
2011	1	10	10%	29,084[3]	0	4	0%	2,170[3]	0	2	0%	2,018[3]

[1]Since October 2008, the Coalition analyzes for both the total and dissolved fraction of copper. For counting exceedances and samples scheduled for copper analysis, this table ignores fraction (e.g. if site A is scheduled for copper total and copper dissolved analysis in Event 1, the table counts only one sample for copper). There has never been and exceedance of both the total and dissolved copper WQTLs at any one site.
[2] Refers to all samples scheduled for constituent analysis (dry sites are included).
[3]PUR data only available through May 2011 for San Joaquin County and November 2011 for Stanislaus County.

C. dubia toxicity

C. dubia toxicity is listed as a priority constituent in all three of the first priority subwatershed management plans. Across the SJCDWQC region, water toxicity to *C. dubia* is often caused, either partially or entirely, by organophosphates in surface waterways. The Coalition's strategy has been to focus on chlorpyrifos and diazinon water quality impairments to address the toxicity. From 2010 to 2011, there has been only one *C. dubia* toxicity in any of the first priority subwatersheds (Table 27). The single *C. dubia* toxicity occurred in 2011 in samples collected from Duck Creek @ Hwy 4 and coincided with an exceedance of chlorpyrifos (almost ten times the WQTL). However, the Toxicity Identification Evaluation (TIE) was inconclusive since the sample lost all detectable toxicity prior to the TIE. The PUR data associated with this exceedance were not available for review at the time of this report. The Coalition reviewed PUR data through May 2011 and plans to contact members who could have contributed to prior exceedances. The Coalition always emphasizes during general and focused outreach, that all pesticides carry risks for water quality and preventing the offsite movement of all pesticides via storm water, irrigation tailwater, and/or sediment, is the most effective method to reduce agriculturally induced water quality impairments. The Coalition believes its strategy of focusing on chlorpyrifos and diazinon is effective in reducing *C. dubia* toxicities, as evidenced by no *C. dubia* toxicity in Unnamed Drain to Lone Tree Creek @ Jack Tone Rd since 2009. Nonetheless, the Coalition recognizes it will need to continue to inform growers of the risks of switching to alternative pesticides and plans to do so via general Coalition outreach (mailings and meetings). During 2012, MPM for *C. dubia* toxicity will occur in Duck Creek @ Hwy 4 (April, July, and September) and Unnamed Drain to Lone Tree Creek @ Jack Tone Rd (January, February, and September).

S. capricornutum toxicity

All three first priority subwatersheds have *S. capricornutum* toxicity listed in their management plans. Since focused outreach began in 2009, *S. capricornutum* toxicity has not occurred at any of these subwatersheds (Table 27). The Coalition believes its focused outreach strategy is successful in reducing *S. capricornutum* toxicity in the first priority subwatersheds. The Coalition will conduct MPM in 2012 for *S. capricornutum* toxicity in all first priority subwatersheds to attempt to demonstrate two consecutive years of monitoring with no toxicities.

H. azteca toxicity

H. azteca toxicity is included in the Lone Tree Creek @ Jack Tone Rd and Unnamed Drain to Lone Tree Creek @ Jack Tone Rd management plans. The Coalition included discussions of sediment-bound constituents and management practices to address sediment toxicity during its focused outreach to growers. Since focused outreach began in 2009, *H. azteca* toxicity occurred in the Unnamed Drain to Lone Tree Creek subwatershed three times (Table 27); toxicity to *H. azteca* occurred only once in Duck Creek (monitoring was conducted in 2010 for *H. azteca* toxicity as part of a DPR grant). Additional chemistry analyses were performed on the most recent toxicities in 2011 (both from Unnamed Drain to Lone Tree Creek), and chlorpyrifos and pyrethroids were detected in the sediment. The PUR data associated with the March toxicity indicated that chlorpyrifos and pyrethroids were applied prior to the monitoring event. The PUR data associated with the October toxicity were not available for review at the time of this report. As discussed above, the Coalition will continue to discuss with growers the risks

associated with offsite movement of storm water, irrigation tailwater, and/or sediment, regardless of the pesticides/herbicides applied. However, growers will be encouraged to take further steps to eliminate all discharges that lead to sediment toxicity. The Coalition will continue MPM for *H. azteca* toxicity at Lone Tree Creek and Unnamed Drain to Lone Tree Creek in 2012 (March storm and September irrigation sediment monitoring) to assess changes in water quality.

Table 27. Toxicity count and samples collected for toxicity analysis in the first priority subwatersheds.

	C. dubia Toxicity			*S. capricornutum* Toxicity			*H. azteca* Toxicity (Sediment)		
Year	Toxicities	Samples[1]	% Toxic	Toxicities	Samples[1]	% Toxic	Toxicities	Samples[1]	% Toxic
2006	1	17	6%	1	17	6%	1	4	25%
2007	1	24	4%	6	24	25%	1	6	17%
2008	5	24	21%	6	24	25%	2	5	40%
2009	2	7	29%	0	8	0%	NA	NA	NA
2010	0	6	0%	0	11	0%	2	4	50%
2011	1	6	17%	0	11	0%	2	4	50%

[1] Refers to all samples scheduled for constituent analysis (dry sites are included). Resampling events are not scheduled monitoring events and are not included.
NA – Not applicable, no samples were collected for the constituent during the year.

SECOND PRIORITY (2010-2012)

An evaluation of the second group of priority subwatersheds was completed by the scheduled deadline of April 2011 (Table 10). A complete evaluation of management practice effectiveness was submitted in the 2011 MPUR; however, due to continued exceedances of the chlorpyrifos WQTL, MPM will continue in the Littlejohns Creek @ Jack Tone Rd subwatershed. Additional focused outreach is scheduled for 2012 with growers in Littlejohns Creek who have recently applied chlorpyrifos.

Sixteen of 19 targeted growers (84%) within the second group of high priority subwatersheds implemented new management practices in 2010 (Table 28). A total of 3,511 acres (94% of the targeted acreage) farmed by targeted growers implemented at least one of the recommended management practices in 2010 (Table 28). No additional practices were planned for 2011 in the second priority subwatersheds; therefore follow up contacts were not necessary in 2012.

Table 28. Second priority percentage of implemented management practices based on irrigated acres and number of members contacted.

	Grant Line Canal @ Clifton Court Rd	Grant Line Canal Near Calpack Rd	Littlejohns Creek @ Jack Tone Rd	Total
# of Targeted Members	2	2	16	**19**[1]
# Members with New Practices	2	2	13	**16**[1]
Percent of Contacted Members with New Practices	100%	100%	81%	**84%**[1]
Acreage of Targeted Members	2176†	1524†	2796	**3,741**
Acreage with New Practices	2176†	1524†	2566	**3,511**
Percent of Targeted Acreage with New Practices	100%	100%	92%	**94%**

[1] Members are counted only once in the 'total' column even if they are represented in more than one subwatershed.
† Due to the small size of the subwatershed, the parcels owned by the targeted members extend beyond its boundaries.

Implemented practices include a reduction in the use of pesticides such as chlorpyrifos, reduction in the runoff volume, implementation of center grass rows, grass waterways or grass filter strips, treatment of runoff water with PAM or other materials, and installation of sprinkler or micro spray irrigation (Table 29). When evaluating management practices and the acreage associated with them, a parcel and its associated acreage may be included under multiple management practices. Table 29 can be used to evaluate number of acres with a particular practice with the overall acreage of the subwatershed or in relation to another management practice.

Table 29. Second priority subwatershed acreage with newly implemented management practices.

Management Practice	Grant Line Canal @ Clifton Court Rd (259 Targeted Acres)†	Grant Line Canal near Calpack Rd (686 Targeted Acres)†	Littlejohns Creek @ Jack Tone Rd (2,796 Targeted Acres)	Sum of Acreage with Newly Implemented Management Practices	Percent of Targeted Acreage
Installation of sprinkler or micro irrigation when an option	0	0	1072	1072	29%
Reduce runoff water volumes using irrigation management	2176	1524	2677	6377	170%
Reduce use of the pesticide types found in exceedance	2176	1524	2250	5950	160%
Use of center grass rows, grass waterways, or grass filter strips	0	0	2001	2001	53%
Treat runoff waters with PAM or other materials	822	926	0	1748	47%

† Due to the small size of the subwatershed, the parcels owned by the targeted members extend beyond its boundaries.

As mentioned under the First Priority Subwatersheds Evaluation section of this report, implementing some management practices might not have been an option for many growers due to financial constraints. The Coalition will continue its strategy of notifying its members about available funding opportunities and encourage them to take advantage of the application process (which is discussed in more detail under the Coalition Wide Evaluation section).

MPM results in the second priority subwatersheds indicate newly implemented management practices are effective in reducing agricultural induced water quality impairments. The Coalition initiated MPM for high priority constituents during months of past exceedances in the second priority subwatersheds in 2010. Focused outreach, including individual meetings with targeted growers, began in the first priority subwatersheds in the winter of 2010. Results from MPM in years during focused outreach (2010-2012) indicate a significant decrease in water quality impairments due to high priority constituents compared to years before growers began to implement additional management practices (Tables 30 and 31). Monitoring from Grant Line Canal @ Clifton Court Rd demonstrates two or more consecutive years of monitoring with no exceedances of copper and lead. The Coalition submitted a letter to the Regional Board on January 6, 2012 petitioning to remove these constituents from the management plan for this site.

Chlorpyrifos

Chlorpyrifos is a high priority constituent for all second priority subwatersheds. During focused outreach, the Coalition made growers aware of the importance of reducing runoff into the creek and encouraged growers to eliminate spray drift. The majority of targeted growers in the second priority subwatersheds implemented practices to prevent chlorpyrifos from entering the waterway, most notably preventing runoff from entering the waterway through irrigation management and reducing or discontinuing use of the products containing chlorpyrifos (Table 30). Despite focused outreach, there was one exceedance of the chlorpyrifos WQTL in Littlejohns Creek @ Jack Tone Rd in November 2011. Although water quality impairments due to chlorpyrifos use continued in 2011, it should be noted that

the percent of exceedances in relation to the number of samples taken in a given year decreased in the second priority subwatersheds by more than half since the Coalition began its focused outreach in 2010 (Table 30). Although preliminary for 2011, the PUR data also indicate that chlorpyrifos use is on a downward trend in 2011 (Table 30). The Coalition is expanding its focused outreach to additional growers in the Littlejohns Creek @ Jack Tone Rd subwatershed in 2012 based on the criteria outlined in the First Priority Subwatersheds Summary of Management Practices section of this report. The last exceedance of chlorpyrifos in the Grant Line Canal @ Clifton Court subwatershed was in 2010; the last exceedance of chlorpyrifos in the Grant Line Canal near Calpack subwatershed was in 2006. Management Plan Monitoring for chlorpyrifos will continue at all second priority sites in 2012 (with at least one site being monitored each month except October and December) and the Coalition is confident that the MPM results will continue to improve as a result of additional outreach efforts. The Coalition believes that if water quality impairments due to chlorpyrifos continue within the Littlejohns Creek @ Jack Tone Rd subwatershed after additional outreach in 2012 that growers not enrolled in the Coalition could be the cause of the exceedances.

Diazinon

Diazinon is a high priority constituent in the Littlejohns Creek @ Jack Tone Rd management plan. The only exceedance of diazinon ever to occur was in 2007, before the onset of the focused outreach (Table 30). Although PUR data indicate that diazinon use increased from 2009 to 2010 (32 to 156 pounds applied, Table 30), the results of MPM indicate that the diazinon that is applied is not entering the waterways. The Coalition believes that management practices implemented as a result of focused outreach contributed to water quality improvements in regards to diazinon. Diazinon is scheduled for MPM at Littlejohns Creek in 2012 during the month of February.

Copper

Copper is a high priority constituent in the Littlejohns Creek @ Jack Tone Rd and Grant Line Canal @ Clifton Court Rd management plans. Since monitoring began in 2006, there has been some decrease in the number and percentages of exceedances of the copper WQTL in the second priority subwatersheds; however, exceedances persisted since focused outreach began (Table 30). One exceedance in May 2010 and one in May 2011 were found during MPM in Littlejohns Creek. These results indicate that applications made in May historically resulted in copper exceedances. The PUR data also indicate that applications of copper are reduced only slightly since 2006 (Table 30). While the Coalition plans to focus additional outreach in 2012 on chlorpyrifos use, a representative will be discussing all pesticides in use, including copper, with targeted growers. The Coalition is hopeful that continued outreach and education to growers will result in water quality improvements where copper is concerned. Copper is scheduled for MPM in 2012 at Grant Line Canal @ Clifton Court Rd (May-September) and Littlejohns Creek @ Jack Tone Rd (February, May, June, and September).

Table 30. Count of exceedances and samples collected for chlorpyrifos, diazinon and copper in second priority subwatersheds.

Year	Chlorpyrifos				Diazinon				Copper[1]			
	Exceedance Count	Samples[2]	% Exceedance	Lbs Applied	Exceedance count	Samples[2]	% Exceedance	Lbs Applied	Exceedance Count	Samples[2]	% Exceedance	Lbs Applied
2006	2	21	10%	6,695	0	21	0%	100	4	15	27%	23,778
2007	5	28	18%	3,663	1	25	4%	28	4	27	15%	21,487
2008	4	23	17%	2,873	0	21	0%	20	3	28	11%	14,900
2009	NA	NA	NA	7,069	NA	NA	NA	32	NA	NA	NA	20,086
2010	2	12	17%	5,097	0	7	0%	156	1	8	13%	19,051
2011	1	14	7%	1,176[3]	0	2	0%	131	1	9	11%	12,757[3]

[1]Since October 2008, the Coalition analyzes for both the total and dissolved fraction of copper in every event. For counting exceedances and samples scheduled for copper analysis, this table ignores fraction (e.g. if site A is scheduled for copper total and copper dissolved analysis in Event 1, the table counts only one sample for copper). No single sample collected from one site during one event has ever exceeded both the total and dissolved copper WQTLs.
[2] Refers to all samples scheduled for constituent analysis (dry sites are included).
[3]PUR data only available through May 2011 for San Joaquin County and November 2011 for Stanislaus County.
NA – Not applicable, no samples were collected for the constituent during the year.

C. dubia toxicity

C. dubia toxicity is listed in the Grant Line near Calpack Rd management plan. Across the SJCDWQC region, water column toxicity to *C. dubia* is often caused, either partially or entirely, by organophosphates in surface waterways. The Coalition's strategy is to focus on chlorpyrifos and diazinon water quality impairments to address the toxicity. The most recent *C. dubia* toxicity occurred in 2008, monitoring for *C. dubia* did not occur in 2009 or 2010. The MPM samples from 2011 were not toxic (Table 31). The Coalition always emphasizes during general and focused outreach that all pesticides carry risks for water quality and preventing the offsite movement of all pesticides, through storm water, irrigation tailwater, and/or sediment, is the most effective method to reduce agriculturally induced water quality impairments. The Coalition believes its strategy of focusing on chlorpyrifos and diazinon is effective in reducing *C. dubia* toxicities, as evidenced by no *C. dubia* toxicity in 2011 MPM results. Grant Line Canal near Calpack Rd will continue to receive MPM in 2012 for *C. dubia* toxicity (March, May and August).

S. capricornutum toxicity

All three second priority subwatersheds have *S. capricornutum* toxicity listed in their management plans. Since focused outreach began in 2010, *S. capricornutum* toxicity has occurred twice (once in Grant Line Canal @ Clifton Court Rd in May 2010 and once in Grant Line Canal near Calpack Rd in January 2011). The count of *S. capricornutum* toxicities has decreased from six in 2008 to one in 2010 and one in 2011 (Table 31). There were fewer samples collected for *S. capricornutum* toxicity in 2010 and 2011, and the samples collected were sampled during months of past toxicities. The TIE associated with the 2010 exceedance indicated that non-polar organic chemicals were the cause of the toxicity. A TIE was not conducted for the 2011 algae toxicity, which had 53% growth compared to the control. The Coalition will continue to monitor for *S. capricornutum* toxicity during 2012 in Grant Line Canal @ Clifton Court Rd (January and May), Grant Line Canal near Calpack Rd (January, February, April, May and July) and Littlejohns Creek @ Jack Tone Rd (March, April, July and August).

H. azteca toxicity

H. azteca toxicity is included in the Grant Line Canal @ Clifton Court Rd and Grant Line Canal near Calpack Rd management plans. The Coalition includes discussions of sediment-bound constituents and management practices to address sediment toxicity during its focused outreach to growers. Since focused outreach began in 2010, *H. azteca* toxicity occurred five times, twice in the Grant Line Canal near Calpack Rd subwatershed and three times in the Grant Line Canal @ Clifton Court Rd subwatershed (Table 31). Additional chemistry analyses were performed on the most recent toxicities in 2011, and pyrethroids were detected in the sediment. The PUR data associated with the 2010 and 2011 toxicities indicate there were applications of pyrethroids (but not chlorpyrifos) prior to sediment collection, some of which were detected during additional chemistry analysis. The Coalition will continue to emphasize to growers the risks associated with offsite movement of storm water, irrigation tailwater, and/or sediment, regardless of the pesticides/herbicides applied. The Coalition will continue to monitor for *H. azteca* toxicity in 2012 at both Grant Line Canal sites (March storm and September irrigation sediment monitoring).

Table 31. Count of toxicities and samples collected for high priority toxic analysis in second priority subwatersheds.

	C. dubia Toxicity			*S. capricornutum* Toxicity			*H. azteca* Toxicity		
Year	Toxicities	Samples[1]	% Toxic	Toxicities	Samples[1]	% Toxic	Toxicities	Samples[1]	% Toxic
2006	1	22	5%	0	21	0%	2	6	33%
2007	0	24	0%	4	24	14%	2	6	33%
2008	1	21	5%	6	21	26%	0	6	0%
2009	NA	NA	NA	NA	NA	NA	NA	NA	NA
2010	NA	NA	NA	1	7	14%	2	3	67%
2011	0	3	0%	1	11	9%	3	4	75%

[1] Refers to all samples scheduled for constituent analysis (dry sites are included). Resampling events are not scheduled monitoring events and are not included.
NA – Not applicable, no samples were collected for the constituent during the year.

THIRD PRIORITY (2011-2013)

An evaluation of the third group of priority subwatersheds is on track to be completed by the scheduled deadlines of April 2012 and April 2013 (Table 12). Results in this report are preliminary; final results of implemented management practices will be summarized in the 2013 MPUR, along with a complete evaluation of management plan effectiveness. To date, 20 of 29 targeted growers (69%) within the third group of high priority subwatersheds implemented new management practices in 2011 (Table 32). A total of 3,708 acres (57% of the targeted acreage) farmed by targeted growers reported implementing at least one of the recommended management practices in 2011 (Table 32).

Table 32. Third priority percentage of preliminary implemented management practices based on irrigated acres and number of members contacted.

	French Camp Slough @ Airport Way	Mokelumne River @ Bruella Rd	Terminous Tract Drain @ Hwy 12	Total
# of Targeted Members	13	12	4	**29**
# Members with New Practices†	10	8	2	**20**
Percent of Contacted Members with New Practices†	77%	67%	50%	**69%**
Acreage of Targeted Members	3767	937	1778	**6,482**
Acreage with New Practices†	2011	779	918	**3,708**
Percent of Targeted Acreage with New Practices†	53%	83%	52%	**57%**

† Preliminary results only

As mentioned under the First and Second Priority Subwatersheds Evaluation sections of this report, implementing some management practices may not be an option for many growers due to financial constraints. The Coalition will continue its strategy of notifying its members about available funding opportunities and encourage them to take advantage of the application process (which is discussed in more detail under the Coalition Wide Evaluation section).

Results from MPM in the third priority subwatersheds indicate newly implemented management practices have been effective in reducing agriculturally related water quality impairments. The Coalition initiated MPM for high priority constituents during months of past exceedances in the third priority subwatersheds in 2010. Results from MPM during the first year of focused outreach (2011) indicate a trend of improving water quality compared to years before growers implemented additional management practices (Tables 33- 35). Monitoring from all three third priority sites demonstrates two or more consecutive years of monitoring with no exceedances of particular constituents. The Coalition submitted a letter to the Regional Board on January 6, 2012 petitioning to remove constituents from the management plan of French Camp Slough @ Airport Way (dieldrin), Mokelumne River @ Bruella Rd (DO and copper), and Terminous Tract Drain @ Hwy 12 (*P. promelas* and *S. capricornutum* toxicity).

Chlorpyrifos

Chlorpyrifos is a high priority constituent for the Terminous Tract Drain and French Camp Slough subwatersheds. During focused outreach, the Coalition informed growers of the importance of irrigation management to reduce runoff into the creek and encouraged growers to consider alternative products to chlorpyrifos. Growers in the French Camp Slough and Terminous Tract Drain subwatersheds started implementing practices specific to reduction of chlorpyrifos use and elimination of runoff. There was one exceedance of the WQTL for chlorpyrifos at Terminous Tract Drain during 2011 MPM and two at French Camp Slough during 2011 Assessment Monitoring (Table 33). Although exceedances of chlorpyrifos occurred in 2011, management practices are continuing to be implemented in third priority subwatersheds. Furthermore, PUR data indicate a decreasing trend in chlorpyrifos use (Table 33). The Coalition is in the process of identifying growers in the Terminous Tract Drain subwatershed who could have contributed to the recent chlorpyrifos exceedance. Additionally, French Camp Slough is downstream of Unnamed Drain to Lone Tree Creek, Lone Tree Creek and Littlejohns Creek. It is anticipated that with the additional implementation of management practices in the upstream subwatersheds, there will also be an improvement in water quality at French Camp Slough. Chlorpyrifos will continue to be monitored in 2012 at French Camp Slough (February, April, May, and July-October) and Terminous Tract Drain (August and September).

Diazinon

Diazinon is a high priority constituent in the French Camp Slough @ Airport Way management plan. There have been no exceedances of diazinon since 2008 (Table 33). Although the PUR data indicated that diazinon use increased in 2010, the overall use of diazinon is still much lower than when the Coalition first began monitoring at third priority sites (Table 33). The Coalition believes that management practices implemented as a result of focused outreach have contributed to improved water quality where diazinon is concerned. Diazinon is scheduled for MPM at French Camp Slough in January and February 2012.

Table 33. Count of exceedances and samples collected for chlorpyrifos and diazinon in third priority subwatersheds.

Year	Chlorpyrifos				Diazinon			
	Exceedance Count	Samples[1]	% Exceedances	Lbs Applied	Exceedance Count	Samples[1]	% Exceedances	Lbs Applied
2006	2	21	10%	21,725	0	21	0%	2,325
2007	1	26	4%	18,219	1	24	4%	713
2008	5	24	21%	9,484	1	24	4%	891
2009	1	12	8%	15,101	0	12	0%	622
2010	1	17	6%	13,393	0	12	0%	977
2011	3	26	12%	2,920[2]	0	24	0%	261[2]

[1] Refers to all samples scheduled for constituent analysis (dry sites are included).
[2]PUR data only available through May 2011 for San Joaquin County and November 2011 for Stanislaus County.

Copper

Copper is a high priority constituent in the French Camp Slough @ Airport Way and Mokelumne River @ Bruella Rd management plans. There have been no exceedances of copper in either subwatershed since 2007 (Table 34). The PUR data also indicate that copper use has decreased substantially since the Coalition began monitoring at third priority sites. The Coalition believes that management practices implemented as a result of focused outreach have contributed to improved water quality in regards to copper. Copper is scheduled for MPM in 2012 at French Camp Slough (February and May-August) and Mokelumne River (June-August).

Diuron

Diuron is a high priority constituent in the French Camp Slough @ Airport Way management plan. There have been no exceedances of diuron since 2008, and use of diuron has dropped by more than two thirds since 2006 (Table 34). The Coalition believes that management practices implemented as a result of focused outreach have contributed to improved water quality in regards to diuron. Diuron is scheduled for MPM at French Camp Slough in 2012 during the months of January and February.

Table 34. Count of exceedances and samples collected for copper and diuron in third priority subwatersheds.

Year	Copper[1]				Diuron			
	Exceedance Count	Samples[2]	% Exceedances	Lbs Applied	Exceedance Count	Samples[2]	% Exceedances	Lbs Applied
2006	4	15	27%	96,664	0	16	0%	8,461
2007	11	27	41%	85,682	1	26	4%	5,754
2008	0	24	0%	63,212	1	25	4%	2,640
2009	NA	NA	NA	64,077	0	1	0%	2,811
2010	0	19	0%	60,002	0	12	0%	2,183
2011	0	24	0%	27,004[3]	0	24	0%	2,483[3]

[1]Since October 2008, the Coalition analyzes for both the total and dissolved fraction of copper in every event. No single sample collected from one site during one event has ever exceeded both the total and dissolved copper WQTLs.
[2] Refers to all samples scheduled for constituent analysis (dry sites are included).
[3]PUR data only available through May 2011 for San Joaquin County and November 2011 for Stanislaus County.
NA – Not applicable, no samples were collected for the constituent during the year.

C. dubia toxicity

C. dubia toxicity is listed in the French Camp Slough and Mokelumne River management plans. Across the SJCDWQC region, water column toxicity to *C. dubia* is often caused, either partially or entirely, by organophosphates in surface waterways. The Coalition's strategy has been to focus on chlorpyrifos and diazinon water quality impairments to address the toxicity. The most recent *C. dubia* toxicity occurred in 2007; monitoring for *C. dubia* did not occur in 2009 (Table 35). The Coalition always emphasizes during general and focused outreach that all pesticides carry risks for water quality and preventing the offsite movement of all pesticides, via storm water, irrigation tailwater, and/or sediment, is the most effective method to reduce agriculturally induced water quality impairments. The Coalition believes its strategy of focusing on chlorpyrifos and diazinon is effective in reducing *C. dubia* toxicities, as evidenced by the lack of *C. dubia* toxicity in 2011 MPM results. Mokelumne River is scheduled for MPM of *C. dubia*

toxicity in 2012 during the months of February and March; French Camp Slough is scheduled for MPM of *C. dubia* toxicity in 2012 during the months of February, March, June and September.

S. capricornutum toxicity

All three third priority subwatersheds have *S. capricornutum* toxicity listed in their management plans. Since focused outreach began in 2011, there have been no *S. capricornutum* toxicities, a significant improvement since 2008, when there were six toxicities in third priority subwatersheds (Table 35). The Coalition will continue to monitor for *S. capricornutum* toxicity during 2012 in French Camp Slough (February and April), Mokelumne River (March-May, July and August), and Terminous Tract Drain (January, February, April and May).

H. azteca toxicity

H. azteca toxicity is included in the French Camp Slough @ Airport Way and Terminous Tract Drain @ Hwy 12 management plans. The Coalition includes discussions of sediment-bound constituents and management practices to address sediment toxicity during its focused outreach to growers. Since focused outreach began in 2011, *H. azteca* toxicity has occurred once from samples collected from French Camp Slough (Table 35). Additional chemistry analyses were not performed on the most recent toxicity in 2011 as it did not meet the criterion for testing. The PUR data associated with the *H. azteca* toxicity were not available for review at the time of this report. The Coalition will continue to emphasize to growers the risks associated with offsite movement of storm water, irrigation tailwater, and/or sediment, regardless of the pesticides/herbicides applied. The Coalition will continue to monitor for *H. azteca* toxicity in 2012 at French Camp Slough and Terminous Tract Drain (March storm and September irrigation sediment monitoring).

Table 35. Count of toxicities and samples collected for high priority toxic analysis in third priority subwatersheds.

	C. dubia Toxicity			*S. capricornutum* Toxicity			*H. azteca* Toxicity		
Year	Toxicities	Samples[1]	% Toxic	Toxicities	Samples[1]	% Toxic	Toxicities	Samples[1]	% Toxic
2006	2	19	11%	0	19	0%	1	4	25%
2007	1	25	4%	1	25	4%	1	7	14%
2008	0	23	0%	7	24	29%	1	5	20%
2009	NA	NA	NA	NA	NA	NA	NA	NA	NA
2010	0	12	0%	0	13	0%	2	3	67%
2011	0	8	0%	0	13	0%	1	2	50%

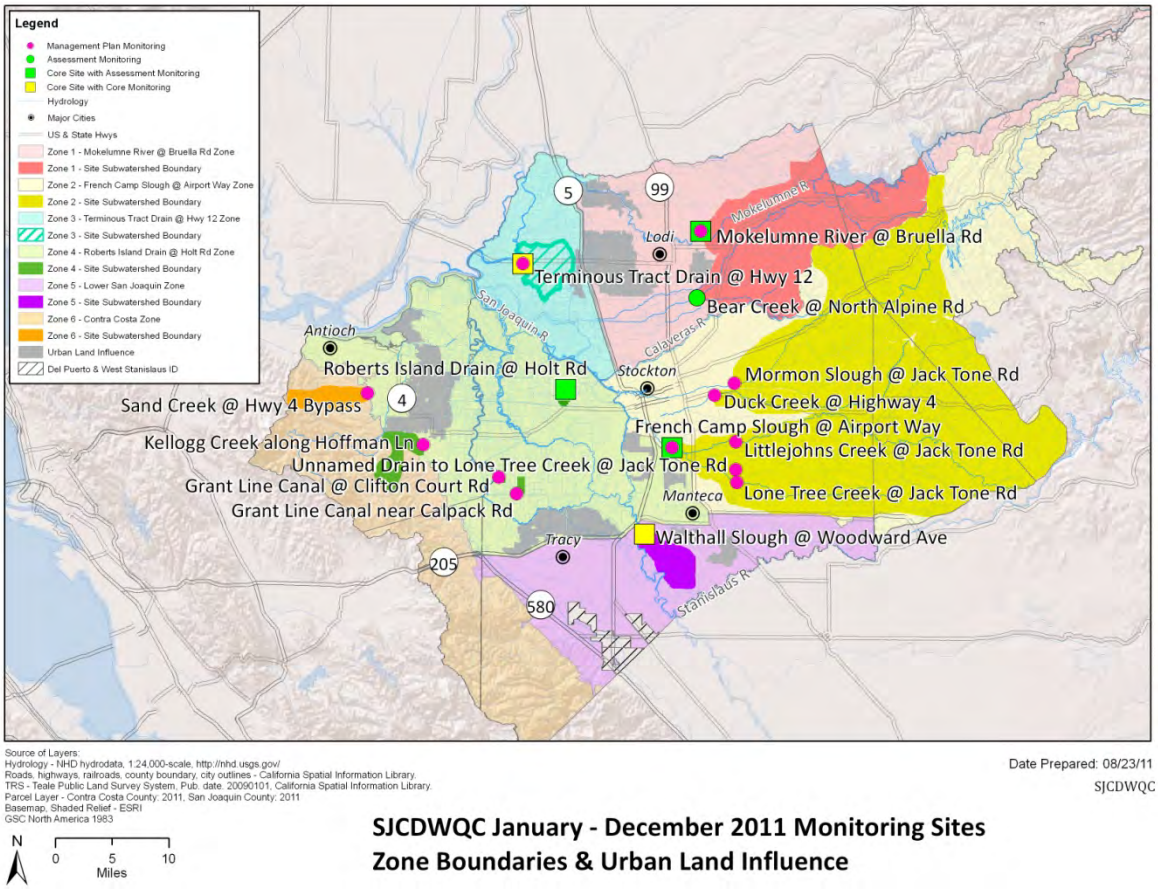
[1] Refers to all samples scheduled for constituent analysis (dry sites are included). Resampling events are not scheduled monitoring events and are not included.
NA – Not applicable, no samples were collected for the constituent during the year.

COALITION WIDE EVALUATION

Monitoring results from recent years indicate that water quality has improved in several SJCDWQC high priority management plan subwatersheds. The Coalition submitted a letter to the Regional Board on January 6, 2012 petitioning to remove constituents from the management plan of seven high priority subwatersheds. Monitoring from these sites demonstrates two or more consecutive years of monitoring with no exceedances of particular constituents. The high priority sites and constituents being petitioned to remove are Duck Creek @ Hwy 4 (pH, diazinon, and *S. capricornutum* toxicity), French Camp Slough @ Airport Way (dieldrin), Grant Line Canal @ Clifton Court Rd (copper and lead), Lone Tree Creek @ Jack Tone Rd (SC, copper, diazinon, diuron, *S. capricornutum* toxicity and *H. azteca* sediment toxicity), Mokelumne River @ Bruella Rd (DO and copper), Terminous Tract Drain @ Hwy 12 (*P. promelas* and *S. capricornutum* toxicity), and Unnamed Drain to Lone Tree Creek @ Jack Tone Rd (diuron, simazine, and *C. dubia* and *S. capricornutum* toxicity). Until the request is approved, the listed constituents will continue to be monitored as scheduled.

During 2011, the Coalition conducted Assessment Monitoring at four sites and MPM at 12 sites. Two of the four Assessment Monitoring sites also received MPM, therefore 15 sites were monitored in 2011 (Table 1 and Figure 21). Of the four sites scheduled for Assessment Monitoring, three were Core Monitoring locations which undergo Assessment Monitoring every third year. Twelve of the 15 sites monitored in 2011 received or are just beginning to receive focused outreach. The remaining three sites are scheduled to rotate into high priority sites and receive focused outreach in 2013.

Figure 21. SJCDWQC January through December 2011 sample locations and zone boundaries.



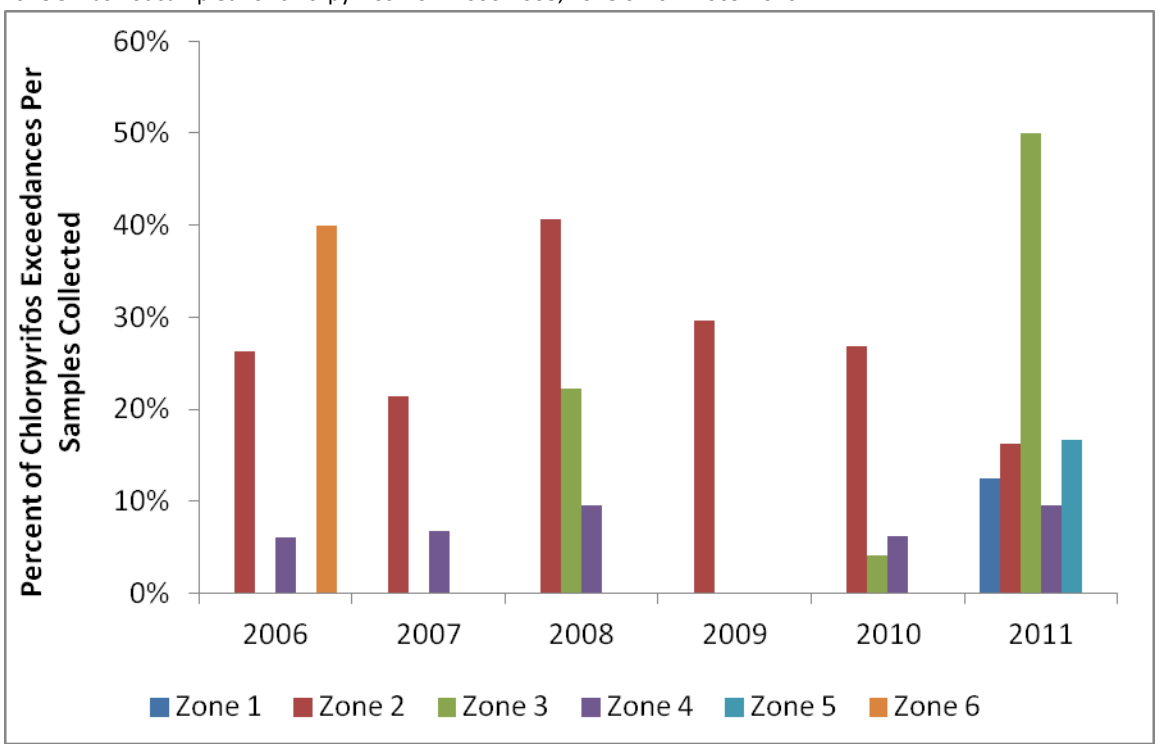
The percentage of chlorpyrifos, diazinon, and copper exceedances by zone and year were evaluated to look for trends in water quality across the entire SJCDWQC region (Figures 22-24). While the percentage of exceedances is indicative of water quality impairments during Assessment Monitoring, exceedances occurring as a result of MPM tend to skew percentage totals upward because of the low number of samples analyzed. Not all zones were monitored for chlorpyrifos, diazinon, or copper during every year; the zones with years of no monitoring are noted in Figures 22-24.

During 2011, there were 15 exceedances of chlorpyrifos in Zones 1-5 (Figure 22). Bear Creek @ North Alpine Rd (Zone 1) had three exceedances, the most of all sites monitored in 2011. Bear Creek was an Assessment site in 2011 and was monitored for chlorpyrifos monthly. Bear Creek is scheduled to rotate into high priority management plan status in 2013. There were seven exceedances of chlorpyrifos in Zone 2, a significant decrease from 2008 (24 exceedances) when outreach first began at sites in Zone 2. All high priority subwatersheds in Zone 2 with chlorpyrifos exceedances are currently receiving focused outreach, including first and second priority subwatersheds that have technically completed their focused outreach (Tables 8-12). All exceedances of chlorpyrifos in Zone 2 occurred during MPM (although one site was undergoing Assessment Monitoring); therefore there were fewer overall samples in 2011. One exceedance of chlorpyrifos occurred in Zone 3 in samples collected from Terminous Tract

Drain @ Hwy 12. Terminous Tract Drain was the only site in Zone 3 scheduled for chlorpyrifos MPM in 2011, resulting in the high percentage of exceedances for this zone. Two exceedances occurred in 2008 at Terminous Tract Drain, and one occurred at another Zone 3 site (Drain @ Woodbridge Rd) in 2010. Outreach is scheduled to continue at Terminous Tract Drain through 2013. There were two exceedances of the chlorpyrifos WQTL in Zone 4 at Roberts Island Drain @ Holt Rd which was monitored for chlorpyrifos monthly in 2011. Roberts Island Drain is scheduled to begin focused outreach in 2013. Two exceedances in Zone 5 occurred at the only site monitored within the zone, Walthall Slough @ Woodward Ave. Walthall Slough was in Assessment Monitoring in 2011 and is scheduled for monthly chlorpyrifos monitoring during 2012 for TMDL compliance. Walthall Slough is scheduled to become a high priority site and receive focused outreach in 2013. No exceedances of chlorpyrifos occurred in Zone 6 in 2011. Ten of the 15 exceedances that occurred in 2011 were from sites that have not completed or have not started focused outreach yet.

Figure 22. Percentage of chlorpyrifos exceedances from all 2006 -2011 monitoring events (Assessment Monitoring and MPM) in SJCDWQC Zones 1-6.

Zone 5 was not sampled for chlorpyrifos from 2006-2008; Zone 6 from 2009-2010.

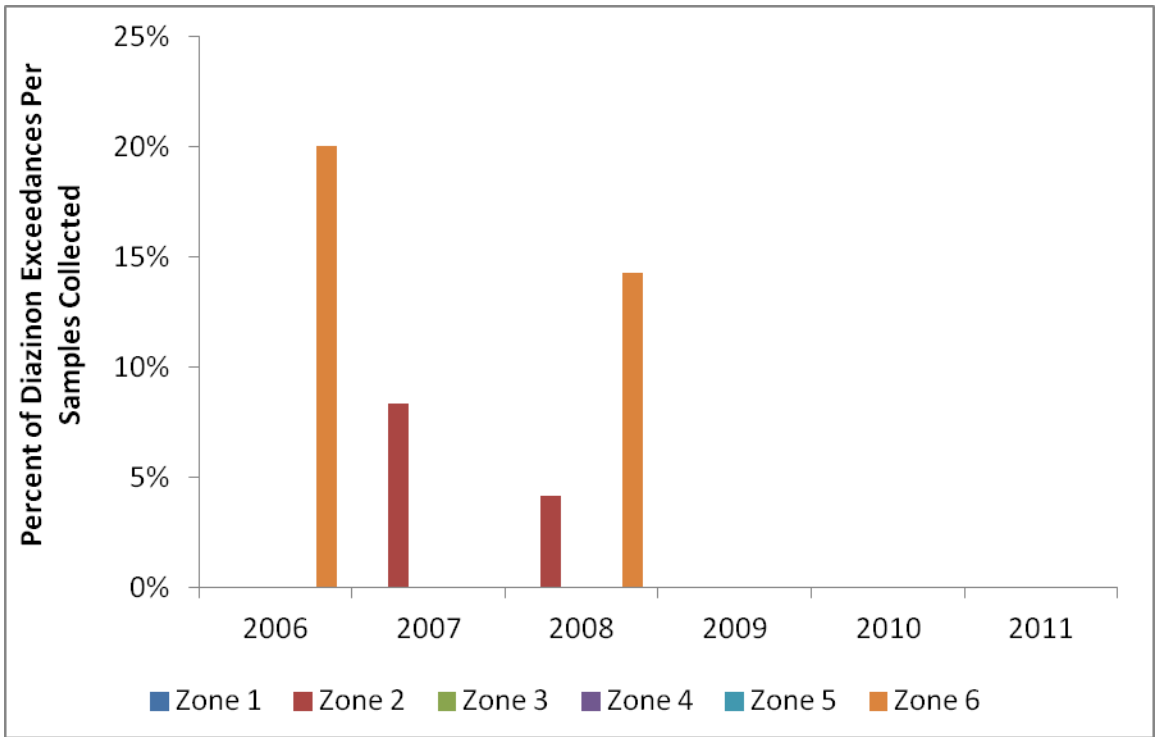


There has not been an exceedance of the diazinon WQTL in any zone in the SJCDWQC region since 2008 (Figure 23). Prior to 2008, six exceedances of diazinon occurred in Zone 2; two exceedances occurred in Zone 6. Since the first exceedances of diazinon in each zone, both zones have decreased in both the count of exceedances and percent of exceedances in relation to samples collected. The sites in Zone 2 where diazinon exceedances have occurred are Duck Creek @ Hwy 4, French Camp Slough @ Airport Way, Littlejohns Creek @ Jack Tone Rd, and Lone Tree Creek @ Jack Tone Rd; all received focused outreach regarding management practices to reduce the impact of diazinon in surface waters. Sand

Creek @ Hwy 4 Bypass is the only site in Zone 6, therefore all exceedances in Zone 6 occurred at this site. Focused outreach began with the one targeted grower in the Sand Creek subwatershed, and he indicated that he did not apply any of the pesticides found in exceedance in 2011; it is expected that the water quality in Sand Creek will continue to improve in 2012.

Figure 23. Percentage of diazinon exceedances from all 2006 -2011 monitoring events (Assessment Monitoring and MPM) in SJCDWQC Zones 1-6.

Zone 1 was not sampled for diazinon in 2010; Zone 3 in 2013; Zone 5 from 2006-2008; Zone 6 from 2009-2010.

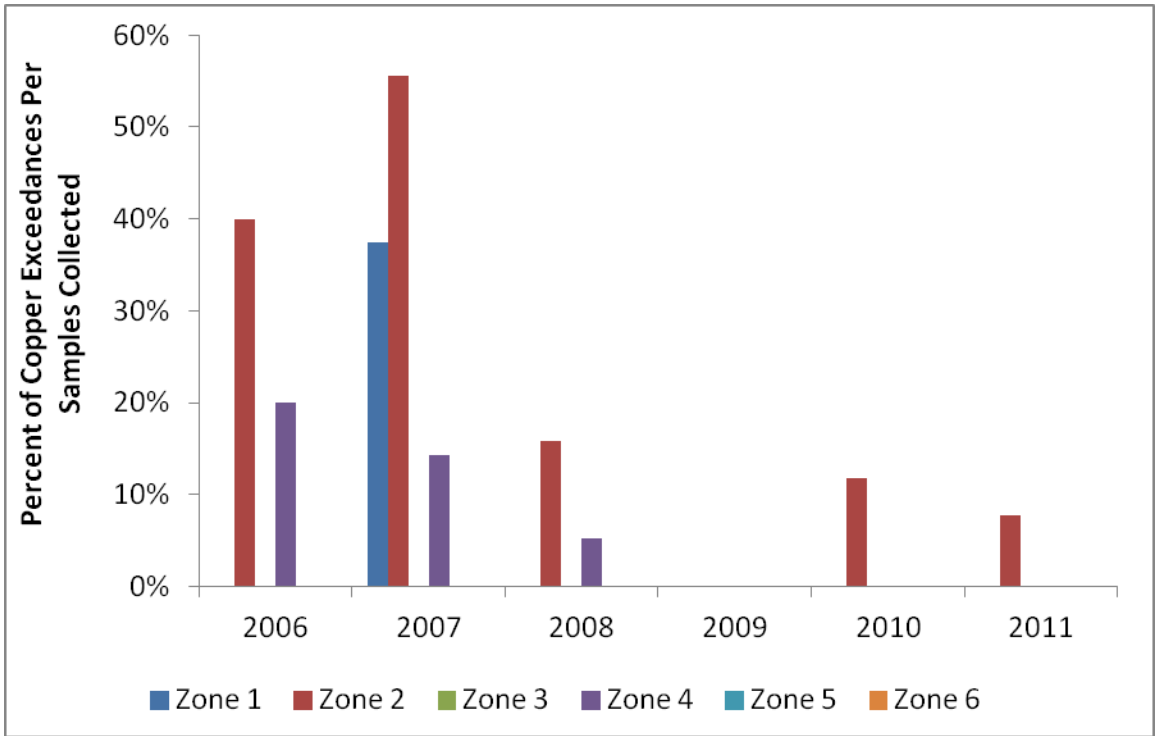


During 2011, there were two exceedances of the copper WQTL in Zone 2 (one at Littlejohns Creek @ Jack Tone Rd and one at Unnamed Drain to Lone Tree Creek @ Jack Tone Rd). Since general outreach began in 2008 there is a significant decrease in copper exceedance counts and percentages (Figure 24). Samples from Mokelumne River @ Bruella Rd (Zone 1) resuted in three exceedances of the copper WQTL in 2007; no other site in Zone 1 was sampled for copper in 2007. Since 2007, there have been no exceedances of the copper WQTL in Zone 1. Mokelumne River @ Bruella is currently in its second year of focused outreach and copper is a major focus of outreach. There were two exceedances of the copper WQTL in Zone 2, a significant decrease from 2007 (when 15 exceedances occurred). All sites in Zone 2 with copper exceedances are currently receiving focused outreach, including first and second priority sites (Tables 8-12). All exceedances of copper in Zone 2 during 2011 occurred as a result of MPM, therefore there were less overall samples in 2011. Samples from Zone 4 have not resulted in exceedances of the copper WQTL since 2008. Since the first exceedance in 2006, both the count of exceedances and percent of exceedances relative to samples have decreased. Both sites in Zone 4 with copper exceedances (Kellogg Creek along Hoffman Ln and Grant Line Canal @ Clifton Court Rd) have

completed or have begun focused outreach. In 2012, all sites with past copper exceedances are scheduled for MPM to assess water quality impairments caused by copper.

Figure 24. Percentage of copper exceedances from all 2006 -2011 monitoring events (Assessment Monitoring and MPM) in SJCDWQC Zones 1-6.

Zone 3 was not sampled for copper in 2011; Zone 5 from 2006-2008 and 2011; Zone 6 from 2006-2007 and 2009-2011.



The Coalition believes its management practice tracking and outreach strategy is successful in improving water quality as evidenced by the decrease in the number and percentage of exceedances over the years. While chlorpyrifos exceedances continued in 2011, outreach is not complete in subwatersheds where two thirds of the exceedances occurred. Additionally, PUR data indicates that chlorpyrifos use has steadily declined over the years (Table 36). In contrast to chlorpyrifos, diazinon and copper have both decreased in both the number of exceedances and the percent of exceedances over the years (Table 36). Preliminary PUR data for 2011 indicate a declining trend in copper and diazinon applications compared to previous years.

Table 36. Count of exceedances and samples collected for high priority pesticides across the SJCDWQC region.

Year	Chlorpyrifos				Diazinon				Copper[1]			
	Exceedance Count	Samples[2]	% Exceedance	Lbs Applied	Exceedance Count	Samples[2]	% Exceedance	Lbs Applied	Exceedance Count	Samples[2]	% Exceedance	Lbs Applied
2006	14	94	15%	92,672	9	40	23%	10,257	1	94	1%	460,834
2007	15	125	12%	81,123	22	71	31%	9,561	4	114	4%	387,484
2008	30	129	23%	50,150	11	123	9%	6,520	3	116	3%	238,364
2009	8	61	13%	78,791	0	41	0%	5,826	0	49	0%	263,895
2010	13	93	14%	63,848	2	61	3%	17,576	0	79	0%	314,325
2011	15	104	14%	17,627[3]	2	69	3%	2,314[3]	0	70	0%	118,632[3]

[1]Since October 2008, the Coalition analyzes for both the total and dissolved fraction of copper in every event. For counting exceedances and samples scheduled for copper analysis, this table ignores fraction (e.g. if site A is scheduled for copper total and copper dissolved analysis in Event 1, the table counts only one sample for copper). No single sample collected from one site during one event has ever exceeded both the total and dissolved copper WQTLs.

[2] Refers to all samples collected for constituent analysis (dry sites not included).

[3]PUR data only available through May 2011 for San Joaquin County and Contra Costa County and through November 2011 for Stanislaus County.

In addition to focused outreach with targeted growers, the Coalition continues to be committed to collaboration with outside sponsors. The Coalition strives to secure unique opportunities that enhance the Coalition's ability to achieve its goal of reducing the impact of agricultural discharge on water quality. The Coalition was awarded a $175,000 grant through the DPR with a goal of reducing pesticide runoff (up to 10 %) by 2011 from tomatoes, alfalfa, walnuts, and wine grapes. With the funds, the Coalition developed a series of crop-specific management practice workbooks that enable individual farmers to easily make management practice decisions specific to their operations (included as Appendix II in the 2011 MPUR). The DPR grant was completed in April 2011 and a final report summarizing the grant project and associated results was submitted to DPR for review.

The Coalition believes growers across the SJCDWQC region are taking additional actions to prevent agricultural induced water quality impairments. The Coalition reviewed management practice funding data from various organizations providing financial support to growers for implementation of management practices. These organizations include Coalition for Urban/Rural Environmental Stewardship (CURES), which is managing the distribution of Proposition 84 (Prop 84) funds and the associated cost share program, and the Agricultural Water Enhancement Program (AWEP) and Environmental Quality Incentives Program (EQIP) funding cost share programs, which are managed by the Natural Resource Conservation Service (NRCS) office of each county within the SJCDWQC region (Contra Costa and San Joaquin).

Data obtained from CURES regarding Prop 84 funding indicate growers have begun or completed implementation of micro irrigation systems associated with 866 acres in San Joaquin County (Table 37). The EQIP data obtained from the Contra Costa County NRCS office indicate growers in multiple areas of Contra Costa County within the SJCDWQC boundaries, including areas not yet a part of focused Coalition outreach, were awarded contracts to aid in the implementation of management practice (Table 38). In addition, AWEP and EQIP funding data obtained from the San Joaquin County NRCS office indicate over hundreds of thousands of acres in San Joaquin County are associated with newly funded management practices in 2010 through 2012 (Table 39). Since the Coalition has only targeted outreach to less than 30,000 acres in San Joaquin County (sum of all targeted acreage in first through fourth priority

subwatersheds that are within San Joaquin County; Tables 8-12), the data demonstrate that growers not targeted by Coalition outreach in San Joaquin County are also seeking funding to implement management practices. These data indicate that growers beyond those farming in the high priority subwatersheds are taking steps to implement additional management practices in the SJCDWQC region.

In addition, data from CURES and the NRCS offices provide insight as to the type of management practices being awarded funding for implementation in the SJCDWQC region. Micro irrigation and tailwater return systems are the only practices funded to date by Prop 84 monies (Table 37). Of the management practices that received EQIP award funding in 2009 through 2011 in Contra Costa County, micro irrigation (302 acres), pest management (238 acres), and the use of PAM or other materials (276 acres) are associated with the most acres receiving award monies (Table 38). Micro irrigation (2,928,521 acres), heavy use area protection (2,284,783 acres) and residue management (1,293,618 acres) are the management practices in San Joaquin County associated with the most acres receiving EQIP and AWEP award monies (Table 39). The practices funded by Prop 84, AWEP and EQIP programs to date include several of the practices recommended by the Coalition during focused outreach; these data indicate targeted growers in the SJCDWQC region have options for financial resources to aid in implementing recommended practices.

Table 37. Prop 84 funding contracts awarded, contract dollars and contract acres in San Joaquin County.
Data provided to the Coalition are considered preliminary.

County	Funding Year	Program	Practice Name	Total Number of Contracts Awarded	Total Contract Dollars[1]	Total Contract Acreage
San Joaquin	2011	Prop 84	Micro irrigation	4	$550,621	866
			Tailwater Return System	1[2]	$30,000[2]	140[2]
			Total	**5**	**$580,621**	**1,006**

[1] Prop 84 funding is a 50% cost share program, therefore the total cost of the management practices is twice the amount listed.
[2] The award has been approved, but the grower has yet to implement the management practice.

Table 38. Acres associated with management practices awarded EQIP funding in Contra Costa County.

Data provided to the Coalition are considered preliminary since counties may still be updating funding award records.

Year	Associated Waterbody	Conservation Cover	Cover Crop	Irrigation Water Management	Micro Irrigation	Nutrient Management	Pest Management	Sprinklers	Treat Runoff Waters with PAM or other materials
2009	Lower Kellogg Creek				3				
2010	Arroyo del Hambre-Frontal Suisun Bay Estuaries	9					19		
	Dutch Slough-Big Break				2				
	Lower Kellogg Creek		20	20				20	
	Lower Marsh Creek	15		15	100				
	Upper Marsh Creek						200		
2011	Arroyo del Hambre-Frontal Suisun Bay Estuaries	9					19		
	Lower Kellogg Creek		38			38		68	
	Lower Marsh Creek		10	53	197	20		38	276
	Total	**33**	**68**	**88**	**302**	**58**	**238**	**126**	**276**

Table 39. Acres associated with management practices awarded AWEP and EQIP funding in San Joaquin County.

Data provided to the Coalition are considered preliminary since counties may still be updating funding award records.

Management Practice	AWEP		EQIP			Total
	2010	2011	2009	2010	2011	
Composting Facility	39,244	169,943	227,188			**436,374**
Conservation Cover				21,208	46,273	**67,480**
Cover crop				58,095	90,612	**148,707**
Heavy Use Area Protection	349,886	1,120,106	15	121,390	693,386	**2,284,783**
Irrigation Water Management		2,500				**2,500**
Land Leveling		26,188	337,114	65,071	124,083	**552,455**
Micro Irrigation	112,500		533,223	289,863	1,992,935	**2,928,521**
Nutrient Management			33,715	19,134		**52,850**
Pest Management			25,997	24,039	5,118	**55,155**
Pipeline			16,499	18,972		**35,472**
Pond sealing or lining flex membrane			15,000	34,375		**49,375**
Residue Management			396,087	355,689	541,842	**1,293,618**
Roof Runoff Structure	24,153	698	6,740			**31,591**
Sprinklers			11,250	45,250		**56,500**
Subsurface Drain				54,050		**54,050**
Tailwater Return System			158,198	82,809	91,364	**332,372**
Underground Outlet			21,750			**21,750**
Waste Storage Facility			661,083	52,500		**713,583**
Waste Utilization	141,000	33,000	18,600	206,325	29,000	**427,925**

Conclusions:

- High priority subwatersheds that have had focused outreach have seen a reduction in exceedances,
- The drop in exceedances coincides with implementation of management practices encouraged by the Coalition,
- Subwatersheds with high numbers of exceedances of pesticides have not completed or started focused outreach.
- Growers in the SJCDWQC region are taking advantage of available funding resources to be used to implement management practices that improve water quality,
- Additional focused outreach continues in first and second priority subwatersheds with continued water quality impairments, and
- After demonstrating two or more consecutive years of monitoring without exceedances, the Coalition petitioned the Regional Board to remove certain constituents from active management plans from seven high priority subwatersheds including all of the first and third priority subwatersheds.

STATUS OF TMDL CONSTITUENTS

The SJCDWQC established monitoring and management activities for TMDL constituents as required in the Regional Board's Basin Plan for the Sacramento and San Joaquin River basins. The Basin Plan establishes TMDL requirements for dischargers and requires that dischargers comply with the monitoring and management criteria defined in the Basin Plan. A narrative concerning each TMDL constituent is provided below to document the Coalition's efforts to meet its TMDL requirements for Coalition members. The Coalition conducts representative monitoring based on zones outlined in the SJCDWQC MRPP (pages 53-64) for waterbodies and constituents with approved TMDLs (Table 40). Table 40 includes EPA approved TMDL constituents that have been attributed to agricultural discharges and lists their associated waterbody name or section described in the approved TMDL and the corresponding Coalition zone. Some Coalition zones overlap multiple TMDL waterbodies.

If an exceedance of a water quality objective occurs for an EPA approved TMDL constituent, a management plan is required for that constituent in that site subwatershed regardless of whether there is a second exceedance. A management plan for a TMDL constituent results in additional focused monitoring, analysis to determine the source of the exceedance, and outreach within the subwatershed. Coalition efforts include but are not limited to: 1) Management Plan Monitoring, 2) conducting site subwatershed grower meetings, 3) encouraging the adoption of and evaluating the efficacy of management practices, and 4) addressing the seven surveillance and monitoring objectives described in the Basin Plan, where applicable.

Table 40. Waterbodies with US EPA approved TMDLs in Coalition zones where representative monitoring occurs.

WATERBODY NAME/SECTION	CONSTITUENT	COALITION ZONE
Delta Waterways (central portion)	Chlorpyrifos	3, 4
Delta Waterways (central portion)	Diazinon	3, 4
Delta Waterways (eastern portion)	Chlorpyrifos	1, 2, 3, 5
Delta Waterways (eastern portion)	Diazinon	1, 2, 3, 5
Delta Waterways (export area)	Chlorpyrifos	4
Delta Waterways (export area)	Diazinon	4
Delta Waterways (southern portion)	Chlorpyrifos	4
Delta Waterways (southern portion)	Diazinon	4
Delta waterways (Stockton Ship Channel)	Chlorpyrifos	2, 4, 5
Delta waterways (Stockton Ship Channel)	Diazinon	2, 4, 5
Delta waterways (Stockton Ship Channel)	Dissolved Oxygen	2, 4, 5
Delta Waterways (western portion)	Chlorpyrifos	4
Delta Waterways (western portion)	Diazinon	4
Five Mile Slough (Alexandria Place to Fourteen Mile Slough; partly in Delta Waterways, eastern portion)	Diazinon	4
Marsh Creek (Marsh Creek Reservoir to San Joaquin River; partly in Delta Waterways, western portion)[1]	Diazinon	6
Mosher Slough (downstream of I-5; partly in Delta Waterways, eastern portion)	Diazinon	4
San Joaquin River (Stanislaus River to Delta Boundary)	Chlorpyrifos	5

WATERBODY NAME/SECTION	CONSTITUENT	COALITION ZONE
Delta Waterways (central portion)	Chlorpyrifos	3, 4

[1]Based on approval from the Regional Board, the SJCDWQC no longer monitors Marsh Creek due to the amount of urban influence and development within this subwatershed.

CHLORPYRIFOS AND DIAZINON TMDL

There are two approved chlorpyrifos and diazinon TMDLs applicable to drainage from the SJCDWQC region. The Lower San Joaquin River chlorpyrifos and diazinon TMDL was approved by the US EPA on October 10, 2007 and establishes six compliance points along the San Joaquin River, the furthest downstream of which is the San Joaquin River @ Vernalis. A relatively small portion of the drainage to the San Joaquin River @ Vernalis compliance point is within the SJCDWQC boundary (e.g. some drainage to the Stanislaus River), but because this compliance point is the furthest downstream point in the San Joaquin River, it receives most of its drainage from areas outside of the Coalition region. Therefore, it was agreed that this monitoring location and the associated compliance and reporting responsibilities would be managed by the East San Joaquin Water Quality Coalition and the Westside San Joaquin River Watershed Coalition. The SJCDWQC is responsible for determining compliance with the Sacramento and San Joaquin Delta chlorpyrifos and diazinon TMDL, which was adopted by the Regional Board in October 21, 2005 and documented in an amendment to the Basin Plan (*Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Diazinon and Chlorpyrifos Runoff into the Sacramento-San Joaquin Delta,* hereafter chlorpyrifos and diazinon Basin Plan Amendment). The US EPA approved this TMDL on December 20, 2006. The Basin Plan requires that dischargers, either individually or as a member of a coalition, describe actions taken to reduce chlorpyrifos and diazinon discharges and meet the applicable water quality objectives (WQOs), loading capacity, and load allocations by the required compliance dates (December 1, 2011 for the dormant season and March 2, 2012 for the irrigation season). The Coalition worked with the Regional Board to establish a monitoring and reporting strategy to demonstrate compliance with the chlorpyrifos and diazinon TMDL. The strategy includes assessing compliance with the chlorpyrifos and diazinon TMDL program Monitoring Objectives:

1. Determine compliance with established water quality objectives and the loading capacity applicable to diazinon and chlorpyrifos in the Delta Waterways,
2. Determine compliance with established load allocations for diazinon and chlorpyrifos,
3. Determine the degree of implementation of management practices to reduce off site movement of diazinon and chlorpyrifos,
4. Determine the effectiveness of management practices and strategies to reduce off site migration of diazinon and chlorpyrifos,
5. Determine whether alternatives to diazinon and chlorpyrifos are causing surface water quality impacts,
6. Determine whether the discharge causes or contributes to a toxicity impairment due to additive or synergistic effects of multiple pollutants, and
7. Demonstrate that management practices are achieving the lowest pesticide levels technically and economically achievable.

Meetings are held quarterly with Regional Board staff to evaluate progress in meeting the Monitoring Objectives, and revisions to the Management Plan will be made if sufficient progress is not being achieved (Table 13).

The Coalition evaluates compliance with WQOs, loading capacity, and load allocations within the four Delta waterway sections and the 303d listed waterbodies that are within the SJCDWQC boundaries through representative monitoring (Table 40, Figure 25). Table 41 associates the Delta subareas and 303d listed waterbodies with the Coalition zone(s) that include a portion or all of each subarea or waterbody. The Coalition associates water quality monitoring results from any site within a zone with the Delta subareas and/or 303d listed waterbodies contained within that zone. For example, Zone 2 overlaps portions of the eastern Delta subarea and the 303d listed Stockton Ship Channel. Duck Creek @ Hwy 4 is within Zone 2 and is considered representative of water quality within Zone 2. Therefore, Duck Creek @ Hwy 4 is associated with the eastern Delta subarea and Stockton Ship Channel (Table 41).

The Coalition has at least one site that is representative of Delta TMDL subareas /303d listed waterbodies and monitors at those locations monthly for chlorpyrifos and diazinon load capacity compliance. During 2011, the Coalition monitored two sites, Roberts Island Drain @ Holt Rd and Walthall Slough @ Woodward Ave, that met this criteria (Table 41 and Table 42). Four additional sites are evaluated for loading capacity compliance which were monitored in 2011 as MPM locations and are named Delta waterbodies (chlorpyrifos and diazinon Basin Plan Amendment, Appendix A). These sites were monitored for chlorpyrifos or diazinon based on months of previous exceedances as per their MPM schedule (Table 42). Overall, in 2011 there were six monitoring locations used to assess loading capacity.

The Coalition assesses load allocation compliance at SJCDWQC sites that are tributaries to the named Delta waterbodies. Nine sites were monitored for load allocation compliance during 2011, including sites within and outside of the legal Delta boundary (Table 42, Figure 25).

Figure 25. Legal Delta boundary, chlorpyrifos and diazinon Delta TMDL subareas, and 2011 SJCDWQC monitoring sites.

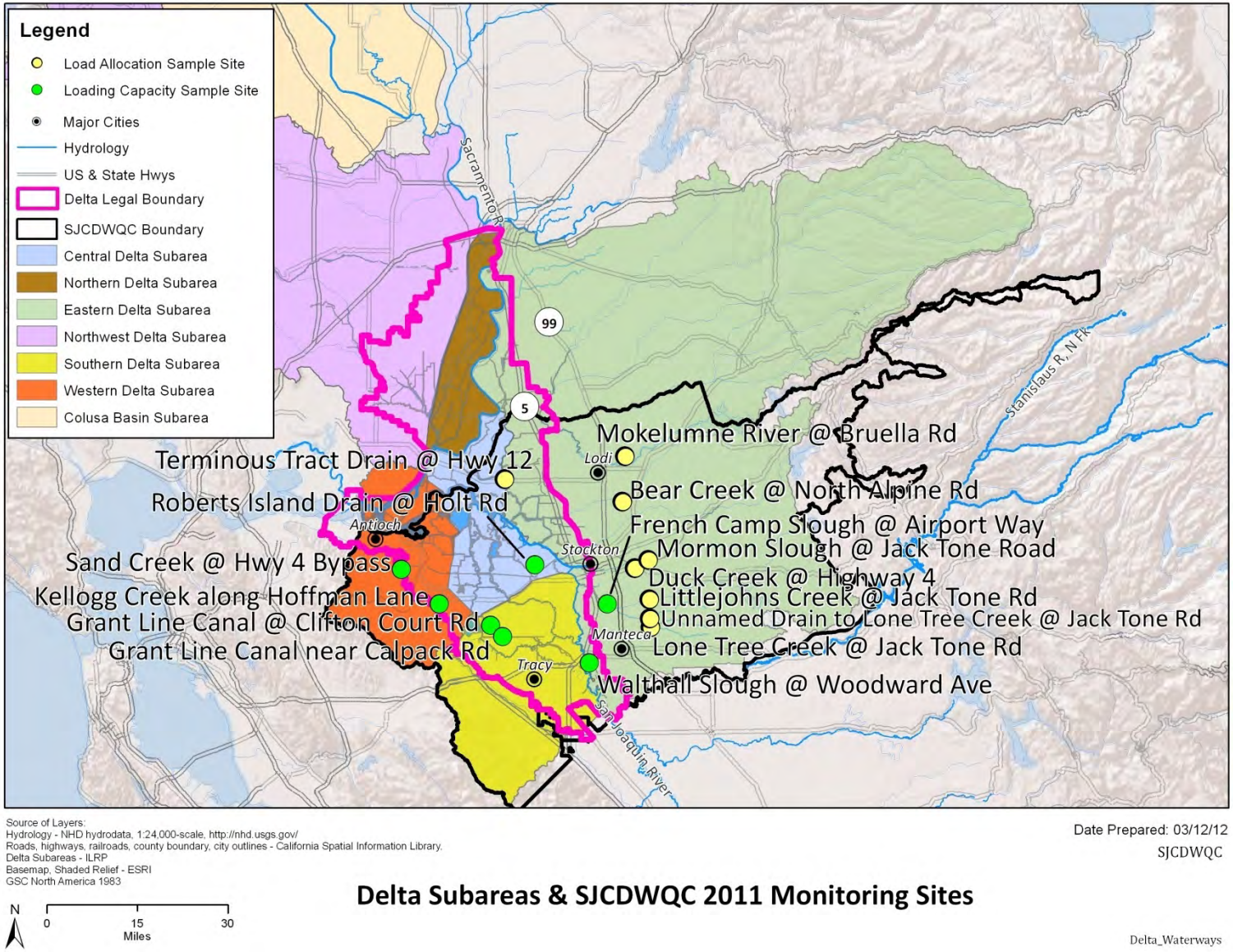


Table 41. Delta TMDL subareas and 303d listed waterbodies within the SJCDWQC region and the associated Coalition zone and 2011 monitoring sites evaluated for compliance with the TMDL.

Representitive Coalition site used to assess loading capacity per each subarea/ 303d listed waterbody is bolded.

Water body Type	Waterbody Name	Constituent	Coalition zone	Site Name	Latitude	Longitude
Delta TMDL Subareas	Delta Waterways (central portion)	Chlorpyrifos, Diazinon	Zone 3	Terminous Tract Drain @ Hwy 12	38.11660	-121.49360
			Zone 4	Grant Line Canal @ Clifton Court Rd	37.84140	-121.52880
				Grant Line Canal near Calpack Rd	37.82050	-121.49990
				Kellogg Creek along Hoffman Ln	37.88190	-121.65220
				Roberts Island Drain @ Holt Rd	**37.95560**	**-121.42230**
	Delta Waterways (eastern portion)	Chlorpyrifos, Diazinon	Zone 1	Bear Creek @ North Alpine Rd	38.07431	-121.21090
				Mokelumne River @ Bruella Rd	38.16010	-121.20510
			Zone 2	Duck Creek @ Hwy 4	37.94910	-121.18100
				French Camp Slough @ Airport Way	37.88170	-121.24930
				Littlejohns Creek @ Jack Tone Rd	37.88960	-121.14610
				Lone Tree Creek @ Jack Tone Rd	37.83760	-121.14380
				Mormon Slough @ Jack Tone Rd	37.96470	-121.14880
				Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	37.85358	-121.14570
			Zone 3	Terminous Tract Drain @ Hwy 12	38.11660	-121.49360
			Zone 5	**Walthall Slough @ Woodward Ave**	**37.77046**	**-121.29227**
	Delta Waterways (southern portion)	Chlorpyrifos, Diazinon	Zone 4	Grant Line Canal @ Clifton Court Rd	37.84140	-121.52880
				Grant Line Canal near Calpack Rd	37.82050	-121.49990
				Kellogg Creek along Hoffman Ln	37.88190	-121.65220
				Roberts Island Drain @ Holt Rd	**37.95560**	**-121.42230**
	Delta Waterways (western portion)	Chlorpyrifos, Diazinon	Zone 4	Grant Line Canal @ Clifton Court Rd	37.84140	-121.52880
				Grant Line Canal near Calpack Rd	37.82050	-121.49990
				Kellogg Creek along Hoffman Ln	37.88190	-121.65220
				Roberts Island Drain @ Holt Rd	**37.95560**	**-121.42230**
			Zone 6	Sand Creek @ Hwy 4 Bypass	37.94750	-121.74300
303d Waterbody	Delta Waterways (export area)	Chlorpyrifos, Diazinon	Zone 4	Grant Line Canal @ Clifton Court Rd	37.84140	-121.52880
				Grant Line Canal near Calpack Rd	37.82050	-121.49990
				Kellogg Creek along Hoffman Ln	37.88190	-121.65220
				Roberts Island Drain @ Holt Rd	**37.95560**	**-121.42230**
	Delta waterways (Stockton Ship Channel)	Chlorpyrifos, Diazinon	Zone 2	Duck Creek @ Hwy 4	37.94910	-121.18100
				French Camp Slough @ Airport Way	37.88170	-121.24930
				Littlejohns Creek @ Jack Tone Rd	37.88960	-121.14610
				Lone Tree Creek @ Jack Tone Rd	37.83760	-121.14380
				Mormon Slough @ Jack Tone Rd	37.96470	-121.14880
				Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	37.85358	-121.14570
			Zone 4	Grant Line Canal @ Clifton Court Rd	37.84140	-121.52880
				Grant Line Canal near Calpack Rd	37.82050	-121.49990
				Kellogg Creek along Hoffman Ln	37.88190	-121.65220
				Roberts Island Drain @ Holt Rd	**37.95560**	**-121.42230**

Water body Type	Waterbody Name	Constituent	Coalition zone	Site Name	Latitude	Longitude
303d Waterbody	Delta waterways (Stockton Ship Channel)	Chlorpyrifos, Diazinon	Zone 5	**Walthall Slough @ Woodward Ave**	**37.77046**	**-121.29227**
	Five Mile Slough (Alexandria Place to Fourteen Mile Slough; partly in Delta Waterways, eastern portion)	Diazinon	Zone 4	Grant Line Canal @ Clifton Court Rd	37.84140	-121.52880
				Grant Line Canal near Calpack Rd	37.82050	-121.49990
				Kellogg Creek along Hoffman Ln	37.88190	-121.65220
				Roberts Island Drain @ Holt Rd	**37.95560**	**-121.42230**
	Mosher Slough (downstream of I-5; partly in Delta Waterways, eastern portion)	Diazinon	Zone 4	Grant Line Canal @ Clifton Court Rd	37.84140	-121.52880
				Grant Line Canal near Calpack Rd	37.82050	-121.49990
				Kellogg Creek along Hoffman Ln	37.88190	-121.65220
				Roberts Island Drain @ Holt Rd	**37.95560**	**-121.42230**
	San Joaquin River (Stanislaus River to Delta Boundary)[1]	Chlorpyrifos	Zone 5	**Walthall Slough @ Woodward Ave**	**37.77046**	**-121.29227**

[1] This section is identified in the Lower San Joaquin River Diazinon and Chlorpyrifos TMDL and is associated with the compliance location San Joaquin River @ Vernalis. This waterbody section has been recently delisted on the 303d list for diazinon.

Table 42. Type of compliance (loading capacity or load allocation) evaluated and monitoring schedule at each SJCDWQC 2011 monitoring site.

Each site was monitored for chlorpyrifos (C) and/or diazinon (D) in one or more months depending on the monitoring type.

Monitoring Compliance Type	Site Name	TMDL Waterbody Type[1]	Coalition Monitoring Type in 2011[2]	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Load Capacity	Roberts Island Drain @ Holt Rd	Delta WB (Unnamed)	Assessment	C,D	C,D	C,D	C,D	C,D	C,D	C,D	C,D	C,D	C,D	C,D	C,D
Load Capacity	Grant Line Canal @ Clifton Court Rd	Delta WB (Named)	MPM	C	C	C						C			
Load Capacity	Grant Line Canal near Calpack Rd	Delta WB (Named)	MPM			C		C		C	C				
Load Capacity	Kellogg Creek along Hoffman Ln	Delta WB (Named)	MPM		C										
Load Capacity	Sand Creek @ Hwy 4 Bypass	Delta WB (Named)	MPM	D				C	C	D					
Load Capacity	Walthall Slough @ Woodward Ave	Delta WB (Named)	Core + TMDL	C,D	C,D	C,D	C,D	C,D	C,D	C,D	C,D	C,D	C,D	C,D	C,D
Load Allocation	Bear Creek @ North Alpine Rd	Tributary to Delta	Assessment	C,D	C,D	C,D	C,D	C,D	C,D	C,D	C,D	C,D	C,D	C,D	C,D
Load Allocation	Duck Creek @ Hwy 4	Tributary to Delta	MPM, DPR	C,D	C,D		C	C	C	C	C	C			
Load Allocation	French Camp Slough @ Airport Way	Tributary to Delta	Assessment	C,D	C,D	C,D	C,D	C,D	C,D	C,D	C,D	C,D	C,D	C,D	C,D
Load Allocation	Littlejohns Creek @ Jack Tone Rd	Tributary to Delta	MPM, DPR	C,D	C,D		C		C	C				C	
Load Allocation	Lone Tree Creek @ Jack Tone Rd	Tributary to Delta	MPM, DPR	C,D	C,D					C	C				
Load Allocation	Mokelumne River @ Bruella Rd	Tributary to Delta	Assessment	C,D	C,D	C,D	C,D	C,D	C,D	C,D	C,D	C,D	C,D	C,D	C,D
Load Allocation	Mormon Slough @ Jack Tone Rd	Tributary to Delta	MPM					C		C	C	C			
Load Allocation	Terminous Tract Drain @ Hwy 12	Delta WB (Unnamed)	MPM								C	C			
Load Allocation	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Tributary to Delta	MPM, DPR	C,D	C,D			C	C	C	C	C		C	C

[1] Named Delta waterbody (WB) within legal Delta boundary, Unnamed Delta waterbody within legal Delta boundary, or Tributary to Delta outside of legal Delta boundary

[2] Assessment Monitoring, MPM, DPR grant monitoring (June 2010 through February 2011), or Core Monitoring with the addition of chlorpyrifos and diazinon for TMDL compliance (Core + TMDL) overall western Delta subarea.

Compliance with Chlorpyrifos and Diazinon WQOs

The Coalition evaluates compliance with the chlorpyrifos and diazinon WQOs by reviewing monthly monitoring results from all sites (Table 42, Figure 25). In 2011, 15 exceedances of the chlorpyrifos WQO and no exceedances of the diazinon WQO occurred at Coalition monitoring locations. At least one chlorpyrifos exceedance occurred in each of the Coalition zones associated with the four Delta subareas and the 303d listed waterbodies (Table 43). The chlorpyrifos exceedances occurred in nine different subwatersheds.

Three, two, and two chlorpyrifos exceedances occurred at Bear Creek @ North Alpine Rd, Roberts Island Drain @ Holt Rd, and Walthall Slough @ Woodward Ave. All three subwatersheds are scheduled to become high priority management plan sites in 2013, at which time the Coalition will address chlorpyrifos water quality impairments.

The remaining exceedances of chlorpyrifos occurred within six subwatersheds that have undergone focused outreach as part of the SJCDWQC Management Plan strategy. The Coalition has yet to carry out its entire outreach strategy in three of the six subwatersheds (French Camp Slough, Mormon Slough, and Terminous Tract), and believes water quality will improve during the final stages of evaluation as a result of new management practice implementation. The Coalition completed its outreach process in Duck Creek, Unnamed Drain to Lone Tree Creek, and Littlejohns Creek. Although growers within the these subwatersheds have implemented additional management practices, samples continue to result in exceedances of the chlorpyrifos WQO. Continued exceedances may be due to a combination of factors including 1) a lack of funds to implement structural management practices that would eliminate discharges (i.e. tailwater return systems), and/or 2) nonmembers who are discharging chlorpyrifos and/or diazinon into downstream waterbodies. Based on PUR data (see Appendix I for high priority subwatershed analysis), both chlorpyrifos and diazinon use has decreased since 2004 (Table 36). The Coalition reviewed previous survey results and PUR data to source recent exceedances, and prepared a list of growers to contact (or, in some cases, re-contact) in the first and second priority subwatersheds that have the greatest likelihood of contributing to continued chlorpyrifos water quality impairments. These growers are scheduled to be contacted during the 2012 irrigation season.

Table 43. SJCDWQC 2011 exceedances of the chlorpyrifos WQO at sites within the Delta waterway sections.
There were no exceedances of the diazinon WQO at any site in the SJCDWQC region in 2011.

Zone	Site Name	TMDL Waterbody Type	Sample Date	Chlorpyrifos (0.015 µg/L)
1	Bear Creek @ North Alpine Rd	Tributary	11/Jan/2011	0.11
	Bear Creek @ North Alpine Rd	Tributary	20/Sep/2011	0.089
	Bear Creek @ North Alpine Rd	Tributary	06/Oct/2011	0.067
2	Duck Creek @ Hwy 4	Tributary	20/Sep/2011	0.12
	French Camp Slough @ Airport Way	Tributary	12/Apr/2011	0.033
	French Camp Slough @ Airport Way	Tributary	06/Oct/2011	0.097
	Littlejohns Creek @ Jack Tone Rd	Tributary	15/Nov/2011	0.022
	Mormon Slough @ Jack Tone Rd	Tributary	20/Sep/2011	0.11

Zone	Site Name	TMDL Waterbody Type	Sample Date	Chlorpyrifos (0.015 µg/L)
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Tributary	11/Jan/2011	0.02
	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Tributary	26/Jul/2011	0.028
3	Terminous Tract Drain @ Hwy 12	Delta WB (Unnamed)	20/Sep/2011	0.082
4	Roberts Island Drain @ Holt Rd	Delta WB (Unnamed)	11/Jan/2011	0.016
	Roberts Island Drain @ Holt Rd	Delta WB (Unnamed)	08/Feb/2011	0.016
5	Walthall Slough @ Woodward Ave	Delta WB (Named)	20/Sep/2011	0.083
	Walthall Slough @ Woodward Ave	Delta WB (Named)	06/Oct/2011	0.078

Compliance with Chlorpyrifos and Diazinon Loading Capacity and Load Allocations

Loading capacity and load allocations for nonpoint source discharges, including agricultural discharges, are based on the following equation for discharges to Sacramento-San Joaquin Delta Waterways:

$$S = \frac{C_D}{WQO_D} + \frac{C_c}{WQO_c} \leq 1.0$$

S= load capacity

C_D = diazinon concentration in µg/L

C_C = chlorpyrifos concentration in µg/L

WQO_D = diazinon water quality objective; 0.1 µg/L

WQO_C = chlorpyrifos water quality objective; 0.015 µg/L

As described above, the Coalition assesses loading capacity compliance at monitoring sites on named Delta waterbodies (listed in Appendix A of chlorpyrifos and diazinon Basin Plan Amendment) and at monitoring sites approved by the Regional Board to be used as representative monitoring locations for the Delta subareas and 303d listed waterbodies (Table 42, Figure 25). The Coalition sampled monthly for both chlorpyrifos and diazinon at the three representative sites (French Camp Slough @ Airport Way, Roberts Island Drain @ Holt Rd, and Walthall Slough @ Woodward Ave) and scheduled MPM for chlorpyrifos and/or diazinon at the four named Delta waterbodies sampled by the Coalition during 2011 (Grant Line Canal @ Clifton Court Rd, Grant Line Canal @ Calpack Rd, Kellogg Creek @ Hoffman Ln, and Sand Creek @ Hwy 4 Bypass; Table 42).

An assessment of load capacity compliance is listed in Table 44 including detected concentrations of chlorpyrifos and diazinon and the calculated load. Four samples collected from two different waterbodies were out of compliance with the established load capacity (Table 44). Chlorpyrifos exceeded the WQO in all four of the samples; diazinon was not detected in any of the samples (Table 44). The non compliant loads occurred at the two representative sites and are therefore associated with all Delta subareas and 303d listed waterbodies (see Table 41 for the listed waterbodies/subareas).

Table 44. Sacramento-San Joaquin Delta Waterways TMDL load capacity compliance calculations for diazinon and chlorpyrifos runoff for nonpoint source discharges in 2011.

If a site was scheduled for chlorpryrifos and/or diazinon analysis during an event and the result is not included in this table, the site was dry during the event.

Zone	Site Name	Sample Date	Chlorpyrifos	Diazinon	Load	Load Capacity Compliance
4	Grant Line Canal @ Clifton Court Rd	1/11/2011	<0.0026	NS	0	In compliance
4	Grant Line Canal @ Clifton Court Rd	2/8/2011	<0.0026	NS	0	In compliance
4	Grant Line Canal @ Clifton Court Rd	3/8/2011	<0.0026	NS	0	In compliance
4	Grant Line Canal @ Clifton Court Rd	9/20/2011	<0.0026	NS	0	In compliance
4	Grant Line Canal near Calpack Rd	3/8/2011	<0.0026	NS	0	In compliance
4	Grant Line Canal near Calpack Rd	5/24/2011	<0.0026	NS	0	In compliance
4	Grant Line Canal near Calpack Rd	7/26/2011	<0.0026	NS	0	In compliance
4	Grant Line Canal near Calpack Rd	8/23/2011	<0.0026	NS	0	In compliance
4	Roberts Island Drain @ Holt Rd	1/11/2011	0.016	<0.004	1.03	Out of compliance
4	Roberts Island Drain @ Holt Rd	2/8/2011	0.016	<0.004	1.03	Out of compliance
4	Roberts Island Drain @ Holt Rd	3/8/2011	<0.0026	<0.004	0	In compliance
4	Roberts Island Drain @ Holt Rd	4/12/2011	<0.0026	<0.004	0	In compliance
4	Roberts Island Drain @ Holt Rd	5/24/2011	<0.0026	<0.004	0	In compliance
4	Roberts Island Drain @ Holt Rd	6/28/2011	<0.0026	<0.004	0	In compliance
4	Roberts Island Drain @ Holt Rd	7/26/2011	<0.0026	<0.004	0	In compliance
4	Roberts Island Drain @ Holt Rd	8/23/2011	<0.0026	<0.004	0	In compliance
4	Roberts Island Drain @ Holt Rd	9/20/2011	<0.0026	<0.004	0	In compliance
4	Roberts Island Drain @ Holt Rd	10/6/2011	<0.0026	<0.004	0	In compliance
4	Roberts Island Drain @ Holt Rd	11/15/2011	<0.0026	<0.004	0	In compliance
4	Roberts Island Drain @ Holt Rd	12/13/2011	<0.0026	<0.004	0	In compliance
5	Walthall Slough @ Woodward Ave	1/11/2011	<0.0026	<0.004	0	In compliance
5	Walthall Slough @ Woodward Ave	2/8/2011	<0.0026	<0.004	0	In compliance
5	Walthall Slough @ Woodward Ave	3/8/2011	<0.0026	<0.004	0	In compliance
5	Walthall Slough @ Woodward Ave	4/12/2011	<0.0026	<0.004	0	In compliance
5	Walthall Slough @ Woodward Ave	5/24/2011	<0.0026	<0.004	0	In compliance
5	Walthall Slough @ Woodward Ave	6/28/2011	<0.0026	<0.004	0	In compliance
5	Walthall Slough @ Woodward Ave	7/26/2011	<0.0026	<0.004	0	In compliance
5	Walthall Slough @ Woodward Ave	8/23/2011	<0.0026	<0.004	0	In compliance
5	Walthall Slough @ Woodward Ave	9/20/2011	0.083	<0.004	5.49	Out of compliance
5	Walthall Slough @ Woodward Ave	10/6/2011	0.078	<0.004	5.16	Out of compliance
5	Walthall Slough @ Woodward Ave	11/15/2011	<0.0026	<0.004	0	In compliance
5	Walthall Slough @ Woodward Ave	12/13/2011	<0.0026	<0.004	0	In compliance
6	Sand Creek @ Hwy 4 Bypass	1/11/2011	NS	<0.004	0	In compliance
6	Sand Creek @ Hwy 4 Bypass	5/24/2011	<0.0026	NS	0	In compliance
6	Sand Creek @ Hwy 4 Bypass	6/28/2011	<0.0026	NS	0	In compliance
6	Sand Creek @ Hwy 4 Bypass	7/26/2011	NS	<0.004	0	In compliance

An assessment of load allocation compliance is listed in Table 45 including detected concentrations of chlorpyrifos and diazinon and the calculated load. Eleven samples collected from seven different waterbodies were out of compliance with the established load allocations (Table 45). Chlorpyrifos exceeded the WQO in all 11 of the samples; diazinon was detected and contributed to the non compliant load in one of the samples, but did not exceed the WQO (Table 45). The non compliant load

allocations occurred in Coalition zones 1, 2, and 3, which are associated with the Delta waterways (central portion), Delta waterways (eastern portion), and Delta waterways (Stockton Ship Channel).

Table 45. Sacramento-San Joaquin Delta Waterways TMDL load allocation compliance calculations for diazinon and chlorpyrifos runoff for nonpoint source discharges in 2011.

If a site was scheduled for chlorpryrifos and/or diazinon analysis during an event and the result is not included in this table, the site was dry during the event.

Zone	Site Name	Sample Date	Chlorpyrifos	Diazinon	Load	Load Allocation Compliance
1	Bear Creek @ North Alpine Rd	1/11/2011	0.11	0.032	7.65	Out of compliance
1	Bear Creek @ North Alpine Rd	2/8/2011	<0.0026	<0.004	0	In compliance
1	Bear Creek @ North Alpine Rd	3/8/2011	<0.0026	<0.004	0	In compliance
1	Bear Creek @ North Alpine Rd	4/12/2011	<0.0026	<0.004	0	In compliance
1	Bear Creek @ North Alpine Rd	5/24/2011	<0.0026	<0.004	0	In compliance
1	Bear Creek @ North Alpine Rd	6/28/2011	<0.0026	<0.004	0	In compliance
1	Bear Creek @ North Alpine Rd	7/26/2011	<0.0026	<0.004	0	In compliance
1	Bear Creek @ North Alpine Rd	8/23/2011	<0.0026	<0.004	0	In compliance
1	Bear Creek @ North Alpine Rd	9/20/2011	0.089	<0.004	5.89	Out of compliance
1	Bear Creek @ North Alpine Rd	10/6/2011	0.067	<0.004	4.43	Out of compliance
1	Bear Creek @ North Alpine Rd	11/15/2011	<0.0026	<0.004	0	In compliance
1	Bear Creek @ North Alpine Rd	12/13/2011	<0.0026	<0.004	0	In compliance
1	Mokelumne River @ Bruella Rd	1/11/2011	<0.0026	<0.004	0	In compliance
1	Mokelumne River @ Bruella Rd	2/8/2011	<0.0026	<0.004	0	In compliance
1	Mokelumne River @ Bruella Rd	3/8/2011	<0.0026	<0.004	0	In compliance
1	Mokelumne River @ Bruella Rd	4/12/2011	<0.0026	<0.004	0	In compliance
1	Mokelumne River @ Bruella Rd	5/24/2011	<0.0026	<0.004	0	In compliance
1	Mokelumne River @ Bruella Rd	6/28/2011	<0.0026	<0.004	0	In compliance
1	Mokelumne River @ Bruella Rd	7/26/2011	<0.0026	<0.004	0	In compliance
1	Mokelumne River @ Bruella Rd	8/23/2011	<0.0026	<0.004	0	In compliance
1	Mokelumne River @ Bruella Rd	9/20/2011	<0.0026	<0.004	0	In compliance
1	Mokelumne River @ Bruella Rd	10/6/2011	<0.0026	<0.004	0	In compliance
1	Mokelumne River @ Bruella Rd	11/15/2011	<0.0026	<0.004	0	In compliance
1	Mokelumne River @ Bruella Rd	12/13/2011	<0.0026	<0.004	0	In compliance
2	Duck Creek @ Hwy 4	1/11/2011	<0.0026	<0.004	0	In compliance
2	Duck Creek @ Hwy 4	2/8/2011	0.004	<0.004	0.23	In compliance
2	Duck Creek @ Hwy 4	4/12/2011	<0.0026	NS	0	In compliance
2	Duck Creek @ Hwy 4	5/24/2011	<0.0026	NS	0	In compliance
2	Duck Creek @ Hwy 4	6/28/2011	<0.0026	NS	0	In compliance
2	Duck Creek @ Hwy 4	7/26/2011	<0.0026	NS	0	In compliance
2	Duck Creek @ Hwy 4	8/23/2011	<0.0026	NS	0	In compliance
2	Duck Creek @ Hwy 4	9/20/2011	0.12	NS	8	Out of compliance
2	French Camp Slough at Airport Way	1/11/2011	<0.0026	<0.004	0	In compliance
2	French Camp Slough at Airport Way	2/8/2011	<0.0026	<0.004	0	In compliance
2	French Camp Slough at Airport Way	3/8/2011	<0.0026	<0.004	0	In compliance
2	French Camp Slough at Airport Way	4/12/2011	0.033	<0.004	2.16	Out of compliance
2	French Camp Slough at Airport Way	5/24/2011	<0.0026	<0.004	0	In compliance
2	French Camp Slough at Airport Way	6/28/2011	<0.0026	<0.004	0	In compliance
2	French Camp Slough at Airport Way	7/26/2011	<0.0026	<0.004	0	In compliance
2	French Camp Slough at Airport Way	8/23/2011	<0.0026	<0.004	0	In compliance
2	French Camp Slough at Airport Way	9/20/2011	<0.0026	<0.004	0	In compliance
2	French Camp Slough at Airport Way	10/6/2011	0.097	<0.004	6.43	Out of compliance

Zone	Site Name	Sample Date	Chlorpyrifos	Diazinon	Load	Load Allocation Compliance
2	French Camp Slough at Airport Way	11/15/2011	<0.0026	<0.004	0	In compliance
2	French Camp Slough at Airport Way	12/13/2011	<0.0026	<0.004	0	In compliance
2	Littlejohns Creek @ Jack Tone Rd	1/11/2011	<0.0026	<0.004	0	In compliance
2	Littlejohns Creek @ Jack Tone Rd	2/8/2011	<0.0026	<0.004	0	In compliance
2	Littlejohns Creek @ Jack Tone Rd	4/12/2011	<0.0026	NS	0	In compliance
2	Littlejohns Creek @ Jack Tone Rd	6/28/2011	<0.0026	NS	0	In compliance
2	Littlejohns Creek @ Jack Tone Rd	7/26/2011	<0.0026	NS	0	In compliance
2	Littlejohns Creek @ Jack Tone Rd	11/15/2011	0.022	NS	1.47	Out of compliance
2	Lone Tree Creek @ Jack Tone Rd	1/11/2011	<0.0026	<0.004	0	In compliance
2	Lone Tree Creek @ Jack Tone Rd	2/8/2011	<0.0026	<0.004	0	In compliance
2	Lone Tree Creek @ Jack Tone Rd	7/26/2011	<0.0026	NS	0	In compliance
2	Lone Tree Creek @ Jack Tone Rd	8/23/2011	<0.0026	NS	0	In compliance
2	Mormon Slough @ Jack Tone Rd	5/24/2011	<0.0026	NS	0	In compliance
2	Mormon Slough @ Jack Tone Rd	7/26/2011	<0.0026	NS	0	In compliance
2	Mormon Slough @ Jack Tone Rd	8/23/2011	<0.0026	NS	0	In compliance
2	Mormon Slough @ Jack Tone Rd	9/20/2011	0.11	NS	7.33	Out of compliance
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	1/11/2011	0.02	<0.004	1.29	Out of compliance
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	2/8/2011	<0.0026	<0.004	0	In compliance
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	5/24/2011	<0.0026	NS	0	In compliance
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	6/28/2011	<0.0026	NS	0	In compliance
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	7/26/2011	0.028	NS	1.87	Out of compliance
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	8/23/2011	<0.0026	NS	0	In compliance
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	9/20/2011	<0.0026	NS	0	In compliance
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	11/15/2011	<0.0026	NS	0	In compliance
3	Terminous Tract Drain @ Hwy 12	8/23/2011	<0.0026	NS	0	In compliance
3	Terminous Tract Drain @ Hwy 12	9/20/2011	0.082	NS	5.47	Out of compliance

NS-Not sampled; analyte not scheduled for analysis during event.

Implementation and Effectiveness of Management Practices to Reduce Chlorpyrifos and Diazinon Off-Site Movement

As discussed in previous MPURs (2010 and 2011), the General Survey Summary Report submitted by the SJCDWQC to the Regional Board on December 30, 2008 assessed management practices utilized by growers across the Coalition region. Based on 2008 membership information, 2,483 members representing 322,146 acres (61% of enrolled irrigated acreage in 2008) could be linked to a survey with at least one question completed.

In 2008, the Coalition began focused outreach efforts and management plan documentation in high priority subwatersheds in the SJCDWQC. As explained above, the Coalition prioritized subwatersheds such that focus is first on constituents likely to originate from agriculture (including chlorpyrifos and diazinon; Table 6). Per each high priority subwatershed, the Coalition compiled a list of targeted growers who had the potential to drain (including spray drift) and who had applied chlorpyrifos and/or diazinon (and/or other high priority constituents) in the last two years. Coalition representatives met with each of the targeted growers to review their operations, including currently implemented management practices, and to encourage and recommend new or additional management practices. The Coalition followed up with growers to record newly implemented management practices and

reviewed this information in conjunction with continued MPM results to determine the effectiveness of implemented management practices and its overall outreach strategy.

As of 2011, the Coalition initiated its focused outreach in nine subwatersheds (Table 6). The Coalition documented currently implemented management practices and made recommendations to growers in all nine subwatersheds (refer to sections First Priority Subwatersheds Summary of Management Practices, Second Priority Subwatersheds Summary of Management Practices, and Third Priority Subwatersheds Summary of Management Practices of this report), and the Coalition documented newly implemented management practices in six of the nine subwatersheds (refer to sections First Priority Subwatersheds Summary of Management Practices and Second Priority Subwatersheds Summary of Management Practices in this report). The management practices recommended by the Coalition and implemented by targeted growers as a result of focused Coalition outreach are designed to improve water quality by preventing the offsite movement of agricultural constituents, including the pesticides chlorpyrifos and diazinon. The Coalition evaluates the effectiveness of implemented management practices by relating data of implemented management practices to monitoring results within high priority subwatersheds (refer to sections First Priority Subwatersheds Evaluation of Management Practice Effectiveness and Second Priority Subwatersheds Evaluation of Management Practice Effectiveness in this report). In addition, the Coalition evaluates effectiveness of implemented management practices across the entire SJCDWQC region on a zone by zone basis by associating water quality with newly implemented management practices per each zone (refer to section Coalition Wide Evaluation of this report).

Alternatives to Chlorpyrifos and Diazinon

During grower outreach, the SJCDWQC encourages growers to switch to products that are lower risk alternatives to chlorpyrifos and diazinon and works to educate growers about the selection of alternatives. Seventy-nine percent of targeted growers (102 of 129) in the first and second high priority subwatersheds indicated they have considered switching to alternative products. Several alternative pesticide and product options exist, such as other organophosphates, carbamates, and pyrethroids. However, alternatives to chlorpyrifos and diazinon depend on the product registration, commodity type, pest pressures, and time of year, among other factors.

The Coalition reviewed PUR data for alternative product use from 2007 through 2010. To aid in the review, the Coalition focused on permanent crops (orchards) for targeted TRSs in the first and second priority subwatersheds and compiled a list of alternative pesticides (active ingredients) applied to fields that also had applications of chlorpyrifos and/or diazinon (Tables 46 and 47) . Based on survey results, the Coalition can determine which growers have indicated that they have switched products and associate those responses with changes of use over time. This is a brief review of potential alternatives based on the criteria listed above and does not include an assessment of pest pressure, application timing or product registration that may also affect the use of alternatives.

Table 46. Alternatives to chlorpyrifos applied in the SJCDWQC first and second priority subwatersheds.

Chemical Name	2007 (lbs applied)	2008 (lbs applied)	2009 (lbs applied)	2010 (lbs applied)	Total (lbs applied)
CHLORPYRIFOS	20,172	12,823	23,299	15,938	72,232
PROPARGITE	23,797	17,677	19,655	19,297	80,426
MALATHION	4,662	784	2,554	4,597	12,596
METHYL PARATHION	6,512	1,205	1,616	1,744	11,077
BIFENTHRIN	2,411	869	980	1,738	5,997
PERMETHRIN	1,083	1,317	1,460	1,970	5,831
IMIDACLOPRID	694	534	2,477	1,695	5,401
BIFENAZATE	717	1,261	2,735	173	4,887
PHOSMET	1,894	952	305	1,145	4,296
CARBARYL	1,688	1,312	655	416	4,071
LAMBDA-CYHALOTHRIN	1,197	377	1,002	664	3,239
SPIRODICLOFEN	914	817	806	39	2,576
NALED	1,382	876	80	98	2,436
ESFENVALERATE	682	373	536	478	2,069
DIFLUBENZURON	616	555	453	277	1,901
ABAMECTIN	159	239	410	637	1,445
SPINETORAM	0	19	126	106	251
CYFLUTHRIN	1	13	155	51	220
SPINOSAD	104	31	13	21	170

Table 47. Alternatives to diazinon applied in the SJCDWQC first and second priority subwatersheds.

Chemical Name	2007 (lbs applied)	2008 (lbs applied)	2009 (lbs applied)	2010 (lbs applied)	Total (lbs applied)
DIAZINON	1,064	1,398	547	636	3,645
PROPARGITE	23,797	17,677	19,655	19,297	80,426
METHYL BROMIDE	8,179	3,503	39,504	10,807	61,993
METHOXYFENOZIDE	2,319	2,057	3,461	3,994	11,832
PERMETHRIN	1,083	1,317	1,460	1,970	5,831
IMIDACLOPRID	694	534	2,477	1,695	5,401
BIFENAZATE	717	1,261	2,735	173	4,887
PHOSMET	1,894	952	305	1,145	4,296
CARBARYL	1,688	1,312	655	416	4,071
METHOMYL	603	621	1,019	1,016	3,259
LAMBDA-CYHALOTHRIN	1,197	377	1,002	664	3,239
FENPROPATHRIN	1,072	422	652	286	2,432
ESFENVALERATE	682	373	536	478	2,069
DIFLUBENZURON	616	555	453	277	1,901
METHIDATHION	988	654	167	0	1,809
AZINPHOS-METHYL	1,175	45	75	31	1,326
SPINETORAM	0	19	126	106	251
CYFLUTHRIN	1	13	155	51	220
(S)-CYPERMETHRIN	38	50	18	68	173
SPINOSAD	104	31	13	21	170

The Coalition identified 21 potential alternatives to chlorpyrifos and/or diazinon for which use has increased in the SJCDWQC region since focused outreach began. Tables 48 and 49 list the active ingredients identified as potential alternatives to chlorpyrifos and diazinon, respectively, the associated analytical group, products and whether or not the chemical is analyzed for when the Coalition conducts Assessment Monitoring. Ten of the active ingredients were found to be alternatives to both chlorpyrifos and diazinon, bifenazate, cyfluthrin, esfenvalerate, imidacloprid, lambda-cyhalothrin, permethrin,

phosmet, propargite, spinetoram, and spinosad. Of the 21 alternative pesticides, the Coalition monitors for 12 during Assessment Monitoring (Table 50).

Table 48. Alternative pesticides for chlorpyrifos for which use generally increased from 2007 through 2010 in the first and second priority subwatersheds[1]. Sorted by active ingredient.

Active Ingredient	Assessment Monitoring[2]	Analytical Group	Applied Product Name(s)
Abamectin	No	Micro-organism derived	ABACUS AGRICULTURAL MITICIDE/INSECTICIDE, ABAMECTIN E-AG 0.15 EC INSECTICIDE, ABBA 0.15 EC, AGRI-MEK 0.15 EC MITICIDE/INSECTICIDE, AVID 0.15EC MITICIDE/INSECTICIDE, CLINCH ANT BAIT, EPI-MEK 0.15 EC MITICIDE/INSECTICIDE, FARMSAVER.COM ABBA 0.15 EC, REAPER 0.15 EC, SOLERA ABAMECTIN 0.15EC AG INSECTICIDE/MITICIDE, TEMPRANO, TIMECTIN 0.15 EC AG INSECTICIDE/MITICIDE, ZORO MITICIDE/INSECTICIDE
Bifenazate	No	Hydrazine carboxylate	ACRAMITE 50WS
Bifenthrin	Yes	Pyrethroid	BIFENTURE, BIFENTURE 10DF INSECTICIDE/MITICIDE, BIFENTURE EC AGRICULTURAL INSECTICIDE, BIFENTURE EC-CA AGRICULTURAL INSECTICIDE, BRIGADE WSB INSECTICIDE/MITICIDE, CAPTURE 2 EC-CAL, DISCIPLINE CA, FANFARE 2EC INSECTICIDE-MITICIDE, HERO EW INSECTICIDE, SNIPER, TALSTAR LAWN & TREE FLOWABLE INSECTICIDE/MITICIDE, UP-STAR SC LAWN & NURSERY INSECTICIDE/MITICIDE
Cyfluthrin	Yes	Pyrethroid	BAYTHROID 2 EMULSIFIABLE PYRETHROID INSECTICIDE, LEVERAGE 2.7 SUSPENSION EMULSION INSECTICIDE
Esfenvalerate	Yes	Pyrethroid	ADJOURN INSECTICIDE, DU PONT ASANA XL INSECTICIDE, S-FENVALOSTAR
Imidacloprid	No	Neonicotinoid	ADMIRE PRO SYSTEMIC PROTECTANT, AE F106464 00 SC43 A4 INSECTICIDE, ALIAS 2F, COURAZE SOLUPAK, DISCUS, IMIDA E-PRO 2F - ORN INSECTICIDE, IMPULSE 1.6 FL, LEVERAGE 2.7 SUSPENSION EMULSION INSECTICIDE, MANA ALIAS 4F, MARATHON 1% GRANULAR GREENHOUSE AND NURSERY INSECTICIDE, MERIT 75 WP INSECTICIDE, MONTANA 2F INSECTICIDE, NUPRID 1.6F INSECTICIDE, NUPRID 2F INSECTICIDE, PASADA 1.6 F FLOWABLE INSECTICIDE, NUPRID 2SC SOIL/FOLIAR INSECTICIDE, PASADA 75 WSB, PROVADO 1.6 FLOWABLE, PROVADO 1.6 FLOWABLE INSECTICIDE, PROVADO SOLUPAK 75% WETTABLE POWDER INSECTICIDE IN WATER SOLUBLE PACKETS
Lambda-Cyhalothrin	Yes	Pyrethroid	KARATE INSECTICIDE, LAMBDA T, LAMBDA-CY AG GOLD, LAMBDA-CY EC INSECTICIDE-RUP, LAMBDASTAR 1 CS, LAMBDASTAR INSECTICIDE, SILENCER, VOLIAM XPRESS, WARRIOR II WITH ZEON TECHNOLOGY, WARRIOR INSECTICIDE WITH ZEON TECHNOLOGY
Malathion	Yes	Organophosphate	CLEAN CROP MALATHION 8 AQUAMUL, CLEAN CROP MALATHION 8-E INSECTICIDE, CYTHION INSECTICIDE "THE PREMIUM GRADE MALATHION"57% EMULSIFIABLE CONCENTRATE, FYFANON ULV, FYFANON ULV AG, GOWAN MALATHION 8, GOWAN MALATHION 8 FLOWABLE, MALATHION 8 AQUAMUL, MALATHION 8 EMULSIVE INSECTICIDE, MALATHION 8E, MALATHION 8EC, ORTHO MALATHION 50 INSECT SPRAY, PROKIL MALATHION 8E
Methyl Parathion	Yes	Organophosphate	PENNCAP-M, PENNCAP-M MICROENCAPSULATED INSECTICIDE
Naled	No	Organophosphate	
Permethrin	No	Pyrethroid	ASTRO INSECTICIDE, FIRST CHOICE PERMETHRIN CUTWORM BAIT, PERMASTAR AG AGRICULTURAL INSECTICIDE, PERMECTRIN II, PERMETHRIN,PERMETHRIN 3.2 AG, PERMETHRIN 3.2 EC INSECTICIDE, PERM-UP 3.2 EC INSECTICIDE, POUNCE 1.5G INSECTICIDE, POUNCE 3.2 EC, TENKOZ PERMETHRIN 3.2 EC INSECTICIDE,TENKOZ PERMETHRIN 3.2EC INSECTICIDE
Phosmet	Yes	Organophosphate	IMIDAN 70-W, IMIDAN 70-WP
Propargite	No	Sulfite ester	COMITE, OMITE 30WS, OMITE-30W, OMITE-30WS, OMITE-6E
Spinetoram	No	Spinosyn	DELEGATE WG, RADIANT SC
Spinosad	No	Micro-organism derived	CONSERVE SC TURF AND ORNAMENTAL, ENTRUST, GF-120 NATURALYTE* FRUIT FLY BAIT, GF-120 NF NATURALYTE FRUIT FLY BAIT, SUCCESS

[1] Does not include Grant Line Canal subwatersheds.

[2]Coalition sampling refers to the type of sampling the Coalition may do for the constituent listed. Pyrethroids are only monitored in sediment when the associated sediment toxicity test is toxic.

Table 49. Alternative pesticides for diazinon for which use generally increased from 2007 through 2010 in the first and second priority subwatersheds[1]. Sorted by active ingredient.

Active Ingredient	Assessment Monitoring[2]	Analytical Group	Applied Product Name(s)
(S)-Cypermethrin	Yes	Pyrethroid	HERO EW INSECTICIDE, MUSTANG 1.5 EW INSECTICIDE, MUSTANG INSECTICIDE, MUSTANG MAX EW INSECTICIDE
Azinphos methyl	Yes	Organophosphate	GUTHION SOLUPAK, GUTHION SOLUPAK 50% WETTABLE POWDER CROP INSECTICIDE IN WATER SOLUBLE PACKETS
Bifenazate	No	Hydrazine carboxylate	ACRAMITE 50WS
Cyfluthrin	Yes	Pyrethroid	BAYTHROID 2 EMULSIFIABLE PYRETHROID INSECTICIDE, DISCUS, LEVERAGE 2.7 SUSPENSION EMULSION INSECTICIDE,RENOUNCE 20 WP INSECTICIDE
Esfenvalerate	Yes	Pyrethroid	ADJOURN INSECTICIDE, DU PONT ASANA XL INSECTICIDE, S-FENVALOSTAR
Fenpropathrin	Yes	Pyrethroid	DANITOL 2.4 EC SPRAY
Imidacloprid	No	Neonicotinoid	ADMIRE PRO SYSTEMIC PROTECTANT, AE F106464 00 SC43 A4 INSECTICIDE, ALIAS 2F, COURAZE SOLUPAK, DISCUS, IMIDA E-PRO 2F - ORN INSECTICIDE, IMPULSE 1.6 FL, LEVERAGE 2.7 SUSPENSION EMULSION INSECTICIDE, MANA ALIAS 4F, MARATHON 1% GRANULAR GREENHOUSE AND NURSERY INSECTICIDE, MERIT 75 WP INSECTICIDE, MONTANA 2F INSECTICIDE, NUPRID 1.6F INSECTICIDE, NUPRID 2F INSECTICIDE, NUPRID 2SC SOIL/FOLIAR INSECTICIDE, PASADA 1.6 F FLOWABLE INSECTICIDE, PASADA 75 WSB, PROVADO 1.6 FLOWABLE, PROVADO 1.6 FLOWABLE INSECTICIDE, PROVADO SOLUPAK 75% WETTABLE POWDER INSECTICIDE IN WATER SOLUBLE PACKETS
Lambda-Cyhalothrin	Yes	Pyrethroid	KARATE INSECTICIDE, LAMBDA T, LAMBDA-CY AG GOLD, LAMBDA-CY EC INSECTICIDE-RUP, LAMBDASTAR 1 CS, LAMBDASTAR INSECTICIDE, SILENCER, VOLIAM XPRESS, WARRIOR II WITH ZEON TECHNOLOGY, WARRIOR INSECTICIDE WITH ZEON TECHNOLOGY
Methomyl	Yes	Carbamate	DU PONT LANNATE INSECTICIDE, DU PONT LANNATE L METHOMYL INSECTICIDE, DU PONT LANNATE LV INSECTICIDE, DU PONT LANNATE METHOMYL INSECTICIDE, DU PONT LANNATE SP INSECTICIDE
Methoxyfenozide	No	Diacylhydrazine	INTREPID 2F
Methyl Bromide	No	Not Classified	MBC CONCENTRATE SOIL FUMIGANT, MBC-33 SOIL FUMIGANT, METHYL BROMIDE 98%, PIC-BROM 25
Permethrin	Yes	Pyrethroid	ASTRO INSECTICIDE, FIRST CHOICE PERMETHRIN CUTWORM BAIT, PERMASTAR AG AGRICULTURAL INSECTICIDE, PERMECTRIN II, PERMETHRIN,PERMETHRIN 3.2 AG, PERMETHRIN 3.2 EC INSECTICIDE, PERM-UP 3.2 EC INSECTICIDE, POUNCE 1.5G INSECTICIDE, POUNCE 3.2 EC, TENKOZ PERMETHRIN 3.2 EC INSECTICIDE, TENKOZ PERMETHRIN 3.2EC INSECTICIDE
Phosmet	Yes	Organophosphate	IMIDAN 70-W, IMIDAN 70-WP, IMIDAN 70-WSB
Propargite	No	Sulfite ester	COMITE, OMITE 30WS, OMITE-30W, OMITE-30WS, OMITE-6E
Spinetoram	No	Spinosyn	DELEGATE WG, RADIANT SC
Spinosad	No	Micro-organism derived	CONSERVE SC TURF AND ORNAMENTAL, ENTRUST, GF-120 NATURALYTE* FRUIT FLY BAIT, GF-120 NF NATURALYTE FRUIT FLY BAIT, SUCCESS

[1] Does not include Grant Line Canal subwatersheds.

[2]Coalition sampling refers to the type of sampling the Coalition may do for the constituent listed. Pyrethroids are only monitored in sediment when the associated sediment toxicity test is toxic.

Table 50. SJCDWQC 2011 sites monitored for potential alternatives to chlorpyrifos and diazinon and for toxicity indicative of potential alternatives to chlorpyrifos and diazinon.

Zone	Site Name	Organophosphates											Carbamates						Toxicity		
		Azinphos-methyl	Dichlorvos	Dimethoate	Demeton-s	Disulfoton	Malathion	Methamidophos	Methidathion	Parathion, methyl	Phorate	Phosmet	Aldicarb	Carbaryl	Carbofuran	Methiocarb	Methomyl	Oxamyl	*C. dubia*	*P. promelas*	*H. azteca*[1]
Zone 1	Mokelumne River @ Bruella Rd	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	M[2]	A	A
	Bear Creek @ North Alpine Rd	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Zone 2	Duck Creek @ Hwy 4																		M		
	French Camp Slough @ Airport Way	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	M[2]	A	M[2]
	Mormon Slough @ Jack Tone Rd																		M		
	Lone Tree Creek @ Jack Tone Rd																				M
	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd																		M		M
Zone 3	Terminous Tract Drain @ Hwy 12																				M
Zone 4	Grant Line Canal @ Clifton Court Rd																				M
	Grant Line Canal near Calpack Rd																		M		M
	Kellogg Creek along Hoffman Ln																		M		M
	Roberts Island Drain @ Holt Rd	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Zone 6	Sand Creek @ Hwy 4 Bypass					M													M		M

M - Management Plan Monitoring is conducted for Priority A-D constituents during months of past exceedances.
[1]If Hyalella survival is less than 80% compared to the control, the following pesticides will be analyzed for: bifenthrin, cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, permethrin, fenpropathrin and chlorpyrifos.
[2]MPM at sites under Assessment Monitoring in 2011.

Coalition monitoring results indicated the presence of alternatives to chlorpyrifos and diazinon in the waterways. Malathion exceeded its WQTL (prohibition of discharge) in samples collected from the Bear Creek @ North Alpine Rd in January, May and September 2011 (Table 51). Across the entire Coalition region, malathion use peaks in the late summer months during applications to walnut orchards and is also applied throughout the year to row crops. Phosmet was also detected in samples collected from Bear Creek during July, but did not exceed the WQTL of 140 µg/L (Table 51). Phosmet is also applied to deciduous orchards during the irrigation season, primarily during the mid-summer months. Carbaryl was detected in samples collected from Roberts Island Drain @ Holt Rd on June 28, 2011 (Table 51). Carbaryl peak use occurs in April and May during applications to apple orchards and tomatoes in the Coalition region and use in the region had been declining since 2006 compared to previous years; however, carbaryl use spiked to its highest level in 2010 as a result of increasing applications to olives (2011 PUR data is not yet available). Of the water column toxicity tests conducted in 2011, there was a single sample that tested toxic to *C. dubia* during September from Duck Creek @ Hwy 4 in Zone 2 (Table 52); it is likely that the toxicity was due to the 0.12 µg/L of chlorpyrifos detected in samples collected at the same time. Analysis of toxic sediment indicated the presence of several pyrethroids, including

bifenthrin, cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, permethrin, and fenpropathrin (Table 53).

Table 51. Results of potential alternative pesticides for 2011 SJCDWQC tributary monitoring.
Constituent WQTL in parenthesis after analyte name. Exceedances are bolded.

Zone	Site Name	Sample Date	Pesticide	Carbaryl (2.53 µg/L)	Malathion (0 µg/L))	Phosmet (140 µg/L)
1	Bear Creek @ North Alpine Rd	11/Jan/2011	Malathion		**0.1**	
1	Bear Creek @ North Alpine Rd	24/May/2011	Malathion		**0.064**	
4	Roberts Island Drain @ Holt Rd	28/Jun/2011	Carbaryl	0.11		
1	Bear Creek @ North Alpine Rd	26/Jul/2011	Phosmet			1.5
2	French Camp Slough at Airport Way	23/Aug/2011	Carbaryl	0.28		
1	Bear Creek @ North Alpine Rd	20/Sep/2011	Malathion		**0.089**	

Monitoring results in 2011 reveal carbaryl, malathion, phosmet, and pyrethroids (Tables 51 and 53) were present in tributaries to the Delta and within the legal Delta boundaries in named Delta waterbodies (Table 41), but only malathion and the pyrethroids are associated with impairing water quality (three malathion exceedances and pyrethroids associated with eight sediment toxicities). In addition, PUR data submitted with the 2011 AMR reveal several alternatives products are applied within the SJCDWQC region. However, as mentioned above, PUR data cannot be used to evaluate if applied chemicals were used as alternatives to chlorpyrifos and/or diazinon. Ultimately, the best way to protect water quality is to prevent the offsite movement of all agricultural constituents—chlorpyrifos, diazinon, and alternatives. The Coalition makes growers aware of this and encourages the implementation of management practices designed to prevent spray drift, irrigation tailwater, sediment, and storm water runoff from carrying pesticides to surface waterways (refer to Management Practices section).

Table 52. Water column and sediment toxicity exceedance summary.

Zone	Site Name	Sample Date	Species	Toxicity End Point	Mean	Percent Control	Toxicity Significance	Summary Comments
2	Duck Creek @ Hwy 4	9/20/2011	*C. dubia*	Survival, %	35	35	SL	A TIE was conducted on 9/26/11 and no toxicity was detected in the TIE. Chlorpyrifos detected.
2	French Camp Slough @ Airport Way	10/14/2011	*H. azteca*	Survival, %	75	86	SG	
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	3/8/2011	*H. azteca*	Survival, %	32	33	SL	Pyrethroids and chlorpyrifos detected.
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	10/14/2011	*H. azteca*	Survival, %	40	46	SL	Pyrethroids and chlorpyrifos detected.
4	Grant Line Canal @ Clifton Court Rd	3/8/2011	*H. azteca*	Survival, %	78	80	SG	Pyrethroids detected.
4	Grant Line Canal @ Clifton Court Rd	10/14/2011	*H. azteca*	Survival, %	69	79	SG	Pyrethroids detected.
4	Grant Line Canal near Calpack Rd	10/14/2011	*H. azteca*	Survival, %	75	86	SG	
4	Kellogg Creek along Hoffman Ln	3/8/2011	*H. azteca*	Survival, %	76	78	SL	Pyrethroids and chlorpyrifos detected.
4	Kellogg Creek along Hoffman Ln	10/14/2011	*H. azteca*	Survival, %	54	62	SL	Pyrethroids and chlorpyrifos detected.
6	Sand Creek @ Hwy 4 Bypass	3/8/2011	*H. azteca*	Survival, %	28	29	SL	Pyrethroids detected.
6	Sand Creek @ Hwy 4 Bypass	10/14/2011	*H. azteca*	Survival, %	69	79	SG	Pyrethroids detected.

SG-Statistically significantly different from control; Greater than 80% threshold
SL-Statistically significantly different from control; Less than 80% threshold

Table 53. Pyrethroids and chlorpyrifos results for toxic sediment samples.

Zone	Site Name	Sample Date	*H. azteca* (Percent Control; % Survival)	Sediment Pesticides µg/kg dw										Lab Result Comment
				Bifenthrin	Chlorpyrifos	Cyfluthrin	Cyhalothrin, Lambda	Cypermethrin,	Deltamethrin: Tralomethrin	Esfenvalerate/ Fenvalerate	Fenpropathrin	Permethrin	Tetramethrin	
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	3/8/2011	33	28	2.5	ND	J0.19	ND	ND	0.56	0.61	13.8	0.59	MPM
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	10/14/2011	46	19.4	1.2	ND	ND	ND	ND	ND	0.96	0.94	ND	MPM
4	Grant Line Canal @ Clifton Court Rd	3/8/2011	80	ND	ND	ND	0.16	ND	ND	42.3	ND	0.54	ND	MPM
4	Grant Line Canal @ Clifton Court Rd	10/14/2011	79	3.6	ND	ND	1.4	0.46	ND	16.8	ND	J0.26	ND	MPM
4	Kellogg Creek along Hoffman Ln	3/8/2011	78	5.9	0.63	ND	J0.11	0.62	ND	ND	ND	0.46	ND	MPM
4	Kellogg Creek along Hoffman Ln	10/14/2011	62	7.7	0.97	0.81	1.1	J0.30	ND	7.5	ND	1.2	ND	MPM
6	Sand Creek @ Hwy 4 Bypass	3/8/2011	29	51.3	ND	1.3	0.9	0.57	0.59	ND	ND	3.4	ND	MPM
6	Sand Creek @ Hwy 4 Bypass	10/14/2011	79	5	ND	J0.25	ND	ND	ND	ND	ND	J0.50	ND	MPM

J-Estimated value
MPM-Management Plan Monitoring
ND- Not Detected

Toxicity Impairment Due to Additive or Synergistic Effects of Multiple Pollutants

To completely understand whether there is additivity or synergy in toxicity caused by different chemicals in an ambient sample, the number of toxic units in the ambient sample must be known as well as all of the potential toxic chemicals in the sample. While the Coalition analyzes for numerous pesticides, there are far more pesticides applied than are covered by the standard water chemistry analysis. A full TIE isolates the organic compounds by a solid phase extraction column and then characterizes the compounds by mass spectrometry analysis. The Coalition performs a Phase I and Phase III TIE which allows for the isolation of a compound type (i.e. non-polar organic, metals) but does not analyze the eluate to identify the specific compound. The cost of a full TIE is beyond the capability of the Coalition. Consequently, there may always be chemicals in the sample that remain unidentified.

If all chemicals in a sample were quantified with confidence, the toxic units in the sample quantified, and the LC50 for the test species available for all quantified chemicals, it is possible to determine if the toxicity observed is matched by the sum of the toxic units of the chemicals in the sample. If the toxic units are accounted for by the toxic units of the individual chemicals and the chemicals have the same mode of action, the toxicity is additive. If the number of toxic units quantified from the ambient sample is greater than the sum of the toxic units of the quantified chemicals, the chemicals are synergistic. If the sum of the toxic units calculated from the concentrations of the chemicals known to be present in the sample is lower than the number of toxic units in the ambient sample determined by toxicity testing, and if there are unknown chemicals in the ambient sample, it cannot be determined if synergy among chemicals is present. Given the lack of exhaustive chemical analysis performed by the Coalition on each sample, it is unlikely that true synergy can be confidently recognized.

The Coalition has conducted monitoring of *C. dubia, P. promelas* and *H. azteca* in Coalition Zones 1, 2, 3, 4, and 6. The Coalition reviewed water column toxicity to *C. dubia* and *P. promelas* to assess toxicity due to insecticides and sediment toxicity to *H. azteca* for toxicity due to chlorpyrifos and/or pyrethroids. Results of toxic samples collected in 2011 are included in Tables 52 and 53.

As discussed above, the single toxicity to *C. dubia* in 2011 occurred in samples collected during September MPM at Duck Creek @ Hwy 4 in Zone 2, which is associated with the eastern Delta subarea and 303d listed Delta Waterways (Stockton Ship Channel, Table 41). The only other constituent scheduled for MPM during the event was chlorpyrifos, and samples exceeded the chlorpyrifos WQTL by eight times (concentration was 0.12 µg/L of chlorpyrifos; the chlorpyrifos WQTL is 0.015 µg/L). However, since the TIE was inconclusive and PUR data are not yet available for this event, the Coalition can only suspect that chlorpyrifos caused the toxicity and cannot be sure if any other pesticides interacted with chlorpyrifos.

As discussed above, eight of the 10 samples toxic to *H. azteca* were analyzed for pyrethroids and chlorpyrifos (Table 52). Pyrethroids were found in all of the eight samples (including bifenthrin, cyfluthrin, cyhalothrin, cypermethrin, deltamethrin/tralomethrin, esfenvalerate/fenvalerate, fenpropathrin, permethrin, and tetramethrin) and chlorpyrifos was found in four of the samples (Table

53). Chlorpyrifos and any of the pyrethroids could have interacted to cause the sediment toxicity; however, the Coalition cannot be sure if those were the only constituents causing the toxicity and if the effect was additive or synergistic.

There is evidence of the potential for additive or synergistic interactions between chlorpyrifos and other agricultural chemicals resulting in toxicities in the tributaries to the Delta and named Delta waterbodies sampled within the legal Delta boundary. Chemical analysis of toxic sediment reveal chlorpyrifos and pyrethroids were present in samples collected from Kellogg Creek and Unnamed Drain to Lone Tree Creek, but the Coalition can only speculate if the chemicals interacted to cause the toxicity to *H. azteca*. However, the evidence is limited to sediment—water column toxicity results during 2011 did not reveal any instance of chlorpyrifos and/or diazinon being present along with other chemicals in samples resulting in toxicity.

Demonstrate That Management Practices Are Achieving the Lowest Pesticide Levels Technically and Economically Achievable

A determination of technical and economical feasibility of achieving the lowest pesticide levels possible needs to be done at the individual farm level and consequently is expected to vary with the specific operation and commodity farmed. The goal of the Coalition is for its members to have no discharge of pesticides to surface waters. Economic feasibility is determined by factors outside the control of the Coalition. Profitable operations can afford to implement expensive management practices such as sediment basins or pressurized irrigation both of which can significantly reduce the runoff of irrigation and storm water carrying agricultural discharges. Marginally profitable operations may not be able to afford these practices. The Coalition is publicizing the current funding available through the Proposition 84 grant program run by the Coalition for Urban/Rural Environmental Stewardship (CURES) and is working with local NRCS offices to notify growers of available EQIP and AWEP funds. These programs offer several million dollars towards the implementation of structural management practices within the Coalition region. However, it will take a few years before the Proposition 84 and other funding is able to make an improvement in water quality. Also, there remain many growers who are not members of the Coalition and improvement of their operations is not possible through Coalition efforts.

It is technically feasible to eliminate all discharges of chlorpyrifos and diazinon to surface waters, although it could require steps that are not economically feasible for even the most profitable operations. It does seem possible to reduce discharges to surface waters to the point that they do not impair beneficial uses. Within the SJCDWQC region, the percentage of exceedances of chlorpyrifos in samples collected in 2010 and 2011 remained the same and diazinon exceedances have not occurred in the Coalition region since 2008. Consequently, the Coalition believes that management practices implemented by growers are resulting in a reduction of discharges, and that it is in the process of achieving the lowest pesticide levels technically and economically achievable.

SALT AND BORON

The Regional Board and stakeholders initiated the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) in July 2008 to facilitate efforts needed for the efficient management of salinity in the Central Valley. The Regional Board and State Water Board initiated this comprehensive effort to address salinity impairments in California's Central Valley and adopt long-term solutions that will lead to improved water quality and economic sustainability with the goal of developing a Salt and Boron Basin Plan Amendment.

The SJCDWQC recognizes that the salt, nitrate and boron water quality impairments are a Central Valley wide concern. The Coalition closely follows the planning and reviewing of studies relevant to the development of a Basin Plan amendment for salt and boron and will participate in the efforts concerning the Delta area once the CV-SALTS process has been successfully completed. In addition, the Coalition monitors for salt (specific conductance) in every zone and boron in three zones (Table 54) and includes these constituents in conversations with growers about water quality impairments and applicable management practices.

The export area, southern, and western Delta waterways are within the SJCDWQC region and are 303d listed for salt and boron; these areas will likely be included in a Salt and Boron Basin Plan Amendment. The Coalition is communicating with the growers in these areas about the Basin Plan requirements for compliance and the status of the CV-SALTS process.

The San Joaquin River (Stanislaus River to Delta Boundary) is with the SJCDWQC region and was previously 303d listed for salt and boron; however, it was delisted in the 2008 report.

Table 54. SJCDWQC sites sampled for salt (specific conductance) and boron during 2011 monitoring.

Zone	Site Name	Type of Monitoring for Specific Conductance	Type of Monitoring for Boron (Total)
Zone 1	Mokelumne River @ Bruella Rd	A	A
	Bear Creek @ North Alpine Rd	A	A
Zone 2	Duck Creek @ Hwy 4	F	
	French Camp Slough @ Airport Way	A	A
	Littlejohns Creek @ Jack Tone Rd	F	
	Mormon Slough @ Jack Tone Rd	F	
	Lone Tree Creek @ Jack Tone Rd	F	
	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	F	
Zone 3	Terminous Tract Drain @ Hwy 12	C	
Zone 4	Grant Line Canal @ Clifton Court Rd	F	
	Grant Line Canal near Calpack Rd	F	
	Kellogg Creek along Hoffman Ln	F	
	Roberts Island Drain @ Holt Rd	A	A
Zone 5	Walthall Slough @ Woodward Ave	C	
Zone 6	Sand Creek @ Hwy 4 Bypass	F	

A – Assessment Monitoring
C – Core Monitoring
F – Sites with MPM collect field parameters (does not necessarily indicate the field parameters are under a Management Plan)

DISSOLVED OXYGEN

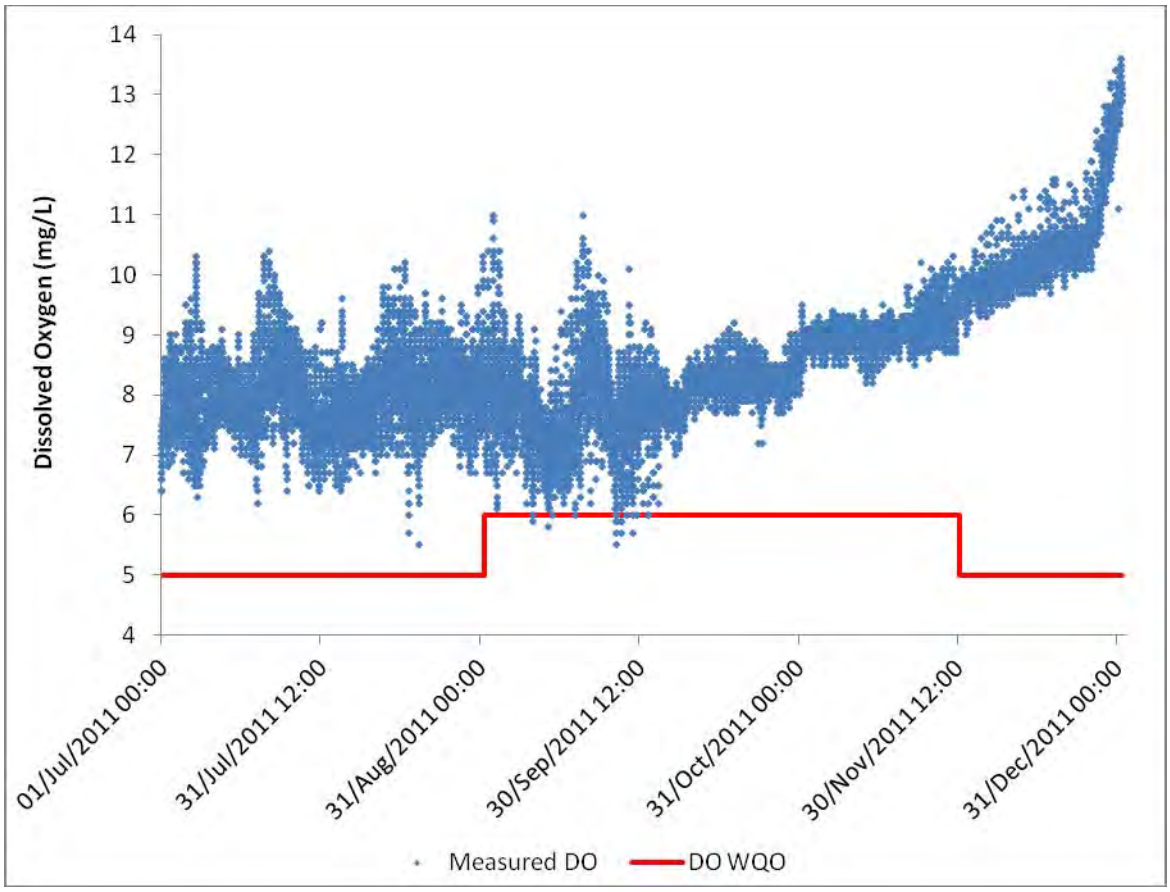
The depression of DO in the Stockton Deep Water Ship Channel (DWSC) has been a significant problem for numerous years. To address the issue, the EPA approved on February 27, 2007 the *Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control Program for Factors Contributing to the Dissolved Oxygen Impairment in the Stockton Deep Water Ship Channel* (hereafter, DO Basin Plan Amendment). The Regional Board identifies three contributing factors to the DO impairment in the DWSC, 1 loads of oxygen demanding substances from upstream sources, 2 geometry of the DWSC, and 3 reduced flow through the DWSC. All factors are considered 100% responsible for reducing DO concentrations in the DWSC. Discharges from irrigated lands are associated with 60% of the load allocation from upstream nonpoint sources, and the SJCDWQC is therefore responsible for adhering to the DO TMDL.

Although, the source area of the problem is identified as upstream in the San Joaquin River and outside of the SJCDWQC boundary, the Coalition reviews DO monitoring results from within the Stockton DWSC and from within its tributaries to assess compliance with the DO WQOs required in the TMDL. The DO Basin Plan Amendment specifies that DO concentrations shall not be reduced below 5.0 mg/L from December 1 through August 31and below 6.0 mg/L from September 1 through November 30 in the legal boundaries of the Delta.

Monthly DO reports posted on the Department of Water Resources Bay-Delta Website (http://baydeltaoffice.water.ca.gov/sdb/af/DWSC_monthly.cfm) indicated the WQOs were met for DO from January through June 2011 in the DWSC. These monitoring reports were prepared by the Stockton DWSC Demonstration DO Aeration Facility and reviewed DO data from the Demonstration DO Aeration Facility remote monitoring stations (Navigation Aid 40, 42, 43, and 48), handheld instruments, and the California Data Exchange Center (CDEC) Rough and Ready Island station. The June 2011 report was the last monthly report produced as the Navigation Aid monitoring stations were removed on June 30, 2011.

To obtain DO data for July through December 2011, the Coalition reviewed monthly monitoring data from CDEC Rough and Ready Island station (Figure 26). The Coalition selected this monitoring station because of its location within the Stockton DWSC and to be consistent with the Demonstration DO Aeration Facility reports. Dissolved oxygen is measured at the site on 15-minute intervals by an auto sampler. During the months of July through August and December, the measured DO concentration was never less than the WQO of 5.0 mg/L. However, the measured DO concentration was less than the WQO of 6.0 mg/L in 10 events during the months of September through November (Figure 26). The non compliant DO measurements occurred between September 10-29, 2011 (Figure 26). Of the 10 non compliant DO measurements, only two occurred in subsequent 15 minute intervals on September 27 at 1:00 AM and 1:15 AM. None of the non compliant DO concentrations were considered persistent in the Stockton DWSC waterway.

Figure 26. CDEC Rough and Ready Island July 1 through December 31, 2011 dissolved oxygen measurements.



To evaluate the Coalition's tributary monitoring results associated with the few DO measurements that were below the WQO in September 2011, the Coalition reviewed tributary monitoring results from the events immediately prior to the non compliant DO measurements in the Stockton DWSC—August 23 and September 20, 2011. Zone 2 contains agriculturally-influenced tributaries that may drain to the Stockton DWSC and could contribute oxygen demanding substances. During August and September 2011, the Coalition monitored for DO at six subwatersheds within the zone (Table 55). There were four exceedances of the DO WQTL at two SJCDWQC tributary sites—two in August and two in September (Table 56). The sample days in August and September followed several days of clear weather with ambient air temperatures reaching above 30°C; air temperatures ranged from 27 to 31°C at the time of sample collection in August and September at both sites, which occurred in the mid-morning or later. The low DO concentrations coincided with relatively high water temperatures, which were most likely a major causative factor. In addition, at least two of the sites had no or minimal flow at the time of sampling (Table 56). Given the high water temperatures in the tributaries and the other various factors, such as changing flow rates and water temperature, that could have affected DO levels in water en route to the Delta, the Coalition believes it is unlikely that these four DO exceedances contributed to the non compliant DO measurements in the Stockton DWSC. The Coalition did not review DO results from tributary monitoring during other months since, even if DO exceedances occurred in Coalition tributaries, the exceedances did not contribute to impairments in the Delta.

Table 55. Tributary sites monitored for DO during months associated with exceedances of DO in the Stockton DWSC.

Zone	Site Name	Monitored for DO in Aug 2011	Monitored for DO in Sep 2011
Zone 2	Duck Creek @ Hwy 4	X	X
	French Camp Slough @ Airport Way	X	X
	Littlejohns Creek @ Jack Tone Rd	X	X
	Lone Tree Creek @ Jack Tone Rd	X	X
	Mormon Slough @ Jack Tone Rd	X	X
	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	X	X

Table 56. Exceedances of the DO WQTL at tributary sites during months associated with exceedances of DO in the Stockton DWSC.

Zone	Site Name	Sample Date	DO (<7.0 mg/L)	Water Temperature (No WQTL, °C)	Discharge (No WQTL, cfs)	Observed Flow Rate (No WQTL, cfs)
Zone 2	Duck Creek @ Hwy 4	8/23/2011	6.2	22.5	10.59	5-20
	Littlejohns Creek @ Jack Tone Rd	8/23/2011	5.2	22.6	NS	50-200
	Duck Creek @ Hwy 4	9/20/2011	6.5	21.24	NR	20-50
	Littlejohns Creek @ Jack Tone Rd	9/20/2011	6.2	22.68	NR	0

NS – Not sampled; toxicity monitoring only
NR – Not recorded; Too deep to take discharge

The Coalition is addressing DO exceedances through its management plan process. Because DO sources are difficult to definitely determine with the resources currently available to the Coalition, DO is classified as a Priority E constituent and the Coalition does not consider sources of DO when identifying growers with whom to conduct focused outreach. The Coalition includes discussions of DO water quality concerns in outreach to growers and encourages implementing management practices to reduce the offsite movement of agricultural constituents, which will aid in reducing offsite movement of organic matter.

In addition, the Coalition continues to follow developments in achieving DO WQOs in the Stockton DWSC. The Coalition participated in several DO TMDL Technical Working Group meetings during 2010 to discuss the progress of several studies and pilot programs (2011 MPUR, page 99, Table 28). These include the upper San Joaquin River DO project and the performance of the Aeration Facility, located at the west (downstream) end of Rough and Ready Island at the Port of Stockton. The *Stockton Deep Water Ship Channel Demonstration Dissolved Oxygen Aeration Facility Project Final Report* was released in December 2010 and indicates the Aeration Facility is a useful and effective tool to achieve the Basin Plan DO WQO in the Deep Water Ship Channel. The Coalition will continue to participate in meetings and review technical documents as they are made available.

METHYL MERCURY

On October 20, 2011, the EPA approved the *Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Methyl mercury and Total Mercury in the Sacramento-San Joaquin River Delta Estuary*. Several meetings were held over the past year as part

of the stakeholder process. Coalition representatives John Herrick, John Brodie and Mike Wackman attend many of the Stakeholder meetings to ensure the Coalition is well informed. The Coalition will incorporate the outcomes of the mercury control plan into its management plan so that members remain in compliance and continue to implement measures to improve water quality.

SITE SUBWATERSHED MANAGEMENT PLAN UPDATE

Brief descriptions of all site subwatersheds included the SJCDWQC Management Plan as of April 1, 2012 are listed below. The descriptions include subwatersheds that are listed as current high priority subwatersheds and those that will reach high priority status in the future. Further analysis of high priority site subwatersheds (2008-2010, 2010-2012, 2011-2013 and 2012-2014) is included in Appendix I of this report.

Bear Creek @ North Alpine Rd

Bear Creek @ North Alpine Rd is a rotating Assessment Monitoring location within the Mokelumne River @ Bruella Rd Zone (Zone 1). Normal Monitoring for Assessment Monitoring constituents began at the site in October 2008 and continued through March 2009 (monitoring was scheduled through 2009; however, the Coalition received approval to revise their monitoring schedule effective April 1, 2009, therefore Normal Monitoring was discontinued at the site beginning April 2009). Assessment Monitoring occurred at Bear Creek @ North Alpine Rd during 2011and is scheduled to occur again after 2035 under the current 2008 MRPP.

Bear Creek @ North Alpine Rd is one of the Coalition's fifth priority subwatersheds and management plan constituents include DO, pH, *E. coli*, chlorpyrifos, and malathion. *E. coli*, pH, chlorpyrifos, and malathion were added due to 2011 monitoring results. Management Plan Monitoring is scheduled in 2012 for chlorpyrifos (September and October) and malathion (May and September). In 2013, MPM will also occur during months of past exceedances; however, chlorpyrifos and malathion MPM in January will also occur. The approval to move Bear creek into priority status did not come until after January 2012 samples were collected and therefore the Coalition will collect the January samples in 2013.

Drain @ Woodbridge Rd

Drain @ Woodbridge Rd is a rotating Assessment Monitoring location within the Terminous Tract Drain Zone (Zone 3). Normal Monitoring for Assessment Monitoring constituents began at the site in October 2008 and continued through March 2009 (monitoring was scheduled through 2009; however, the Coalition received approval to revise their monitoring schedule effective April 1, 2009, therefore Normal Monitoring was discontinued at the site beginning April 2009). Assessment Monitoring occurred at Drain @ Woodbridge Rd during 2010 under the current 2008 MRPP. Assessment Monitoring is next scheduled after 2035.

To address these water quality impairments, the Coalition added Drain @ Woodbridge Rd to its priority subwatershed list and management plan constituents include DO, SC, TDS, *E. coli*, arsenic and chlorpyrifos.

Duck Creek @ Hwy 4

The Duck Creek @ Hwy 4 site subwatershed is a rotating Assessment Monitoring location within the French Camp Slough @ Airport Way Zone (Zone 2). This site was first monitored in 2004; Normal Monitoring resumed in 2006 and continued through March 2009 (monitoring was scheduled to continue through 2009; however, the Coalition received approval to revise their monitoring schedule effective April 1, 2009, therefore Normal Monitoring was discontinued at the site beginning April 2009). Assessment Monitoring is next scheduled for Duck Creek @ Highway 4 in 2012 and 2035.

Duck Creek was one of the first high priority subwatersheds and management plan constituents include DO, pH, *E. coli*, chlorpyrifos, diazinon, and water column toxicity to *C. dubia* and *S. capricornutum*. Additional MPM at Duck Creek began in 2007 (September) for chlorpyrifos. In 2008, MPM for chlorpyrifos took place upstream at Duck Creek @ Drais Rd. In 2009, MPM occurred during months of past exceedances for chlorpyrifos and water column toxicity to *C. dubia* and *S. capricornutum*. The Coalition continued MPM in 2010 and 2011 for high priority constituents (chlorpyrifos and toxicity to *C. dubia* and *S. capricornutum*) during months of past exceedances. From June 2010 through February 2011, diazinon, chlorpyrifos and sediment toxicity to *H. azteca* were monitoring as a part of DPR grant monitoring to reduce the impact of agricultural discharge on water quality. Exceedances of the WQO for chlorpyrifos and *C. dubia* toxicity continued in 2011. Management Plan Monitoring is scheduled to continue through 2012 for all high priority constituents.

In addition, the Coalition carried out its management practice tracking and outreach strategy which included contacting targeted growers in 2008 and following up with the growers in 2009 and 2010. A summary of current, recommended and newly implemented management practices in the Duck Creek subwatershed is included in this report under the First Priority Subwatersheds Summary. Due to continued exceedances of chlorpyrifos in 2010 (May, July, August and September) and 2011 (September), additional outreach was conducted with growers identified to have the greatest likelihood of contributing to water quality impairments in Duck Creek (both members and non-members of the Coalition) in 2010 and 2011. The Coalition is continuing this outreach to three additional growers in the Duck Creek subwatershed in 2012. Coalition representatives are recommending new management practices to these growers and are hopeful that improvements in water quality will be evident within the next year.

French Camp Slough @ Airport Way

French Camp Slough @ Airport Way is a Core Monitoring location under the current 2008 MRPP. Normal Monitoring was conducted at the site from 2005 through September 2008, under the 2006 MRPP. Under the current 2008 MRPP, French Camp Slough was scheduled for Core Monitoring from October 2008 through December 2010 and Assessment Monitoring took place at the site in 2011. Core Monitoring is scheduled to occur again in 2012.

French Camp Slough @ Airport Way is one of the Coalition's third priority subwatersheds and management plan constituents include DO, pH, *E. coli,* copper, lead, chlorpyrifos, diazinon, dieldrin, diuron, thiobencarb, *C. dubia* toxicity, *S. capricornutum* toxicity, and *H. azteca* sediment toxicity.

Management Plan Monitoring at French Camp Slough began in 2007 and resumed in 2010 through 2011. Exceedances of high priority constituents occurred in 2011 for chlorpyrifos (April and October) and *H. azteca* sediment toxicity (October). Upstream MPM at Lone Tree Creek @ Jack Tone Rd, Littlejohns Creek @ Jack Tone Rd, and Unnamed Drain to Lone Tree Creek @ Jack Tone Rd took place in varying months from 2007 through 2011. In 2012, MPM is scheduled for copper (February and May-August), chlorpyrifos (February, April, May, and July-October), diazinon (January and February), dieldrin (July), diuron (January and February), *C. dubia* toxicity (February and March), *S. capricornutum* toxicity (February and April), and sediment toxicity to *H. azteca* (March and September).

The Coalition also initiated its management practice tracking and outreach strategy during 2011 with targeted growers; a summary of current and recommended practices is included in the Third Priority Subwatersheds Summary of Management Practices section of this report. Management Plan Monitoring and outreach is scheduled to occur through 2013.

Grant Line Canal @ Clifton Court Rd

Grant Line Canal @ Clifton Court Rd is a rotating Assessment Monitoring location within the Roberts Island @ Whisky Slough Pump Zone (Zone 4). Monitoring at Grant Line Canal @ Clifton Court Rd began in the storm season of 2005 and continued through the storm and irrigation seasons of 2006 through 2008. Starting in October 2008, Grant Line Canal @ Clifton Court Rd became a rotating Assessment site under the current 2008 MRPP. Assessment Monitoring is scheduled to occur at this location after 2035.

Grant Line Canal @ Clifton Court Rd is one of the Coalition's second priority subwatersheds and management plan constituents include DO, pH, SC, TDS, *E. coli,* arsenic, copper, lead, chlorpyrifos, DDE, water column toxicity to *S. capricornutum*, and sediment toxicity to *H. azteca*. During 2007, 2008, 2010, and 2011, MPM took place for high priority constituents during months of past exceedances. *H. azteca* samples were toxic twice during 2011 (March and October), however no other high priority constituents exceeded the WQTL. Management Plan Monitoring will continue in 2012 for copper (May-September), chlorpyrifos (Jan-March and September), water column toxicity to *S. capricornutum* (January and May) and sediment toxicity to *H. azteca* (March and September).

In addition, the Coalition carried out its management practice tracking and outreach strategy which included contacting targeted growers in 2010 and following up with the growers in 2011. A complete summary of current, recommended and newly implemented management practices in the Grant Line Canal @ Clifton Court Rd subwatershed was included in the 2011 MPUR under the Second Priority Subwatersheds Summary of Management Practices section.

Grant Line Canal near Calpack Rd

Grant Line Canal near Calpack Rd is a rotating Assessment Monitoring location within the Roberts Island @ Whisky Slough Pump Zone (Zone 4). Monitoring at Grant Line Canal near Calpack Rd began in the storm season of 2005 and continued through 2008. Starting in October 2008, Grant Line Canal near Calpack Rd became a rotating Assessment site under the current 2008 MRPP. Assessment Monitoring is scheduled to occur at this location after 2035.

Grant Line Canal near Calpack Rd is one of the Coalition's second priority subwatersheds and management plan constituents include DO, SC, TDS, *E. coli,* arsenic, chlorpyrifos, water column toxicity to *C. dubia* and *S. capricornutum*, and sediment toxicity to *H. azteca*. During 2007, 2008, 2010, and 2011, MPM took place for high priority constituents during months of past exceedances. During 2011, toxicity occurred to *H. azteca* and *S. capricornutum* one time each (October and January; respectively). No other high priority constituents exceeded the WQTL at the site during 2011 monitoring. Management Plan Monitoring will continue in 2012 for chlorpyrifos (March, May, July and August), water column toxicity to *C. dubia* (March, May and August), water column toxicity to *S. capricornutum* (January, February, April, May and July) and sediment toxicity to *H. azteca* (March and September).

In addition, the Coalition carried out its management practice tracking and outreach strategy which included contacting targeted growers in 2010 and following up with the growers in 2011. A complete summary of current, recommended and newly implemented management practices in the Grant Line Canal near Calpack subwatershed was included in the 2011 MPUR under the Second Priority Subwatersheds Summary of Management Practices section.

Kellogg Creek along Hoffman Lane

Kellogg Creek along Hoffman Ln is a rotating Assessment Monitoring location within the Roberts Island @ Whisky Slough Pump Zone (Zone 4). Monitoring was initiated at Kellogg Creek @ Hwy 4 in the storm season of 2005 and was carried out for three seasons, ending with the storm season of 2006. Due to large amounts of urban inputs, Kellogg Creek @ Hwy 4 (which is downstream of the Kellogg Creek along Hoffman Ln) is no longer monitored. The Kellogg Creek along Hoffman Ln site subwatershed monitoring location was established during an upstream sampling event in September 2005 to isolate the source of toxicity related to agriculture. Kellogg Creek along Hoffman Lane is scheduled for Assessment Monitoring after 2035.

Kellogg Creek along Hoffman Ln is one of the Coalition's fourth priority subwatersheds and management plan constituents include DO, pH, SC, TDS, *E. coli*, copper, DDE, DDT, water column toxicity to *C. dubia* and *S. capricornutum*, and sediment toxicity to *H. azteca.* Management Plan Monitoring occurred for high priority constituents in months of past exceedances in 2007, 2008, and 2011. *H. azteca* was toxic twice in 2011 (March and October), however no other high priority constituents exceeded the WQTL. Management Plan Monitoring will occur in 2012 for copper (February and July), chlorpyrifos (February), water column toxicity to *C. dubia* (February-April), water column toxicity to *S. capricornutum* (April, May and August), and sediment toxicity to *H. azteca* (March and September).

In addition, the Coalition identified growers with the greatest likelihood of contributing to water quality impairments in the Kellogg Cree subwatershed and will begin focused outreach in early 2012. Monitoring results from 2012 MPM will allow the Coalition to evaluate if its outreach strategy is making any progress toward improving water quality in the creek.

Littlejohns Creek @ Jack Tone Rd

Littlejohns Creek @ Jack Tone Rd is a rotating Assessment Monitoring location within the French Camp Slough @ Airport Way Zone (Zone 2). Monitoring was initiated at Littlejohns Creek @ Jack Tone Rd during the irrigation season of 2004 and continued through the 2008 irrigation season. Starting in October 2008, Littlejohns Creek @ Jack Tone Rd became an Assessment site under the current 2008 MRPP and Assessment Monitoring is scheduled to occur in 2021.

Littlejohns Creek is one of the Coalition's second priority subwatersheds and management plan constituents include DO, pH, *E. coli*, copper, chlorpyrifos, diazinon, and water column toxicity to *S. capricornutum*. Additional MPM for chlorpyrifos and *S. capricornutum* toxicity occurred at Littlejohns Creek in 2007. Management Plan Monitoring continued in 2008 at two upstream locations (Littlejohn's Creek @ 26 Mile Rd and Littlejohns Creek @ Escalon Bellota Rd) in an attempt to source exceedances of metals, chlorpyrifos, and *S. capricornutum* toxicity. Management Plan Monitoring did not occur in 2009. Additional DPR grant monitoring occurred from June 2010 through February 2011 for chlorpyrifos, diazinon and sediment toxicity to *H. azteca.* Management Plan Monitoring occurred in 2010 through 2011 for high priority constituents during months of past exceedances. Copper and chlorpyrifos were the only high priority constituents to exceed the WQTL in 2011 (May and November; respectively). The only constituent to be added to the list of management plan constituents due to 2011 monitoring results is pH. Management Plan Monitoring is scheduled in 2012 for copper (February, May, June and September), chlorpyrifos (February, April, June, July and November), diazinon (February), and *S. capricornutum* toxicity (March, April, July and August).

In addition, the Coalition carried out its management practice tracking and outreach strategy which included contacting targeted growers in 2010 and following up with the growers in 2011. Additional outreach due to continued exceedances of the water quality objective is scheduled for 2012. The Coalition is hopeful that this additional outreach will lead to improved water quality results in 2012. A complete summary of management practices implemented by growers in this subwatershed was included in the 2011 MPUR under the Second Priority Subwatersheds Management Practices section.

Lone Tree Creek @ Jack Tone Rd

Lone Tree Creek @ Jack Tone Rd is a rotating Assessment Monitoring location within the French Camp Slough @ Airport Way Zone (Zone 2). Monitoring was initiated at this location in 2004 and has continued through 2011. Normal Monitoring was last conducted in 2008 under the old MRPP. Lone Tree Creek @ Jack Tone Rd is scheduled for Assessment Monitoring in 2026.

Lone Tree Creek is one of the Coalition's first priority subwatersheds and management plan constituents include DO, pH, TDS, ammonia, *E. coli*, copper, chlorpyrifos, diazinon, diuron, thiobencarb, water column toxicity to *S. capricornutum* and *P. promelas*, and sediment toxicity to *H. azteca*. Management Plan Monitoring for the Coalition was initiated during June of 2007 and included chlorpyrifos (July and August). From 2009 through 2011, MPM occurred during months of past exceedances. From June 2010 through February 2011, additional samples were collected for chlorpyrifos, diazinon, and sediment toxicity to *H. azteca* as part of DPR grant monitoring. There were no exceedances of a WQTL for any

high priority constituents from 2011 monitoring results. The Coalition scheduled MPM at Lone Tree Creek in 2012 for copper (January, February, and July-September), chlorpyrifos (January, February, July and August), diazinon (January and February), diuron (January and February), water column toxicity to *S. capricornutum* (January-May), and sediment toxicity to *H. azteca* (March and September).

The Coalition completed its management practice tracking and outreach strategy to targeted growers within this subwatershed in 2008 and followed up with growers in 2009 and 2010. Additional outreach to two targeted growers to address continued water quality impairments is scheduled to occur in 2012. The Coalition is hopeful that this additional outreach will lead to improved water quality results in 2012. A complete summary of implemented management practices was included in the 2011 MPUR under the First Priority Subwatersheds Summary of Implemented Management Practices section.

Mokelumne River @ Bruella Rd

Mokelumne River @ Bruella Rd is a Core Monitoring location within the Mokelumne River @ Bruella Rd Zone (Zone 1). Monitoring at Mokelumne River @ Bruella Rd began in August 2004 and occurred continuously through 2011. During 2011, Assessment Monitoring took place and is scheduled to occur every third year (2014, 2017, etc.) and Core Monitoring is scheduled in 2012.

Mokelumne River @ Bruella Rd is one of the Coalition's third priority subwatersheds and management plan constituents include DO, pH, *E. coli*, copper, and water column toxicity to *S. capricornutum* and *C. dubia*. Management Plan Monitoring was initiated at Mokelumne River @ Bruella Rd in 2007. Additional MPM took place at this location from 2007 through 2008. Management Plan Monitoring did not take place in 2009. In 2010 and 2011, MPM for high priority constituents during months of past exceedances continued. Exceedances of the WQTL for pH and *E. coli* occurred in 2010 and 2011. In 2012, MPM is scheduled for copper (June-August), *C. dubia* toxicity (February, March, June and September), and *S. capricornutum* toxicity (March-May, July and August).

The Coalition also initiated its management practice tracking and outreach strategy during 2011 with targeted growers; a summary of current and recommended practices is included in the Third Priority Subwatersheds Summary of Management Practices section of this report. Management Plan Monitoring and outreach is scheduled to occur through 2013.

Mormon Slough @ Jack Tone Road

Mormon Slough @ Jack Tone Rd is a rotating Assessment Monitoring location within the French Camp Slough @ Jack Tone Rd Zone (Zone 2). Monitoring was initiated at Mormon Slough @ Jack Tone Rd in the irrigation season of 2006 and continued through 2008. Sampling did not occur at Mormon Slough @ Jack Tone Rd during 2009 or 2010, but resumed in 2011. Assessment Monitoring is scheduled to occur in 2017.

Mormon Slough @ Jack Tone Rd is one of the Coalition's fourth priority subwatersheds and management plan constituents include DO, pH, chlorpyrifos, and water column toxicity to *C. dubia* and *S. capricornutum.* Management Plan Monitoring was initiated at Mormon Slough @ Jack Tone Rd in

2008 and resumed in 2011 for high priority constituents during months of past exceedances. An exceedance of the chlorpyrifos WQTL occurred once in 2011 (September). In 2012, MPM is scheduled to continue for chlorpyrifos (May and July-September), toxicity to *C. dubia* (May and September) and toxicity to *S. capricornutum* (April, May and July).

Focused outreach is scheduled to occur in early 2012 at the Mormon Slough and monitoring results from 2012 MPM will allow the Coalition to evaluate if its outreach strategy is making any progress toward improving water quality in the creek.

Roberts Island @ Whisky Slough Pump

Roberts Island @ Whisky Slough Pump replaced two former sites in Zone 4 (Roberts Island Drain @ Holt Rd and Roberts Island Drain along House Rd, approved January 12, 2012). Roberts Island Drain @ Whisky Slough Pump also replaced Roberts Island Drain @ Holt Rd as the Core Monitoring location for Zone 4. In 2012, Core Monitoring and MPM for constituents from the previous sites will take place at Roberts Island @ Whisky Slough Pump. Roberts Island Drain along House Rd was monitored from 2006 through 2008; Roberts Island Drain @ Holt Rd was monitored from 2006 through 2011, although monitoring did not occur at this location in 2008. Assessment Monitoring is scheduled in 2014.

Roberts Island @ Whisky Slough Pump is one of the Coalition's fifth priority subwatersheds and management plan constituents include DO, pH, SC, TDS, *E. coli*, arsenic, chlorpyrifos, cypermethrin, DDE, DDT, diuron, water column toxicity to *C. dubia* and *S. capricornutum* and sediment toxicity to *H. azteca*. There were two exceedances of chlorpyrifos in 2011 (January and February). In 2012, MPM for chlorpyrifos, diuron, water column toxicity to *C. dubia* and *S. capricornutum* and sediment toxicity to *H. azteca* is scheduled.

Sand Creek @ Hwy 4 Bypass

Sand Creek @ Hwy 4 Bypass is a monitoring location within the Contra Costa Zone (Zone 6). Because Zone 6 has a high urban influence and Sand Creek @ Hwy 4 Bypass is the only MPM location within the zone, it is not scheduled for future Assessment Monitoring. Monitoring was initiated at Sand Creek @ Hwy 4 Bypass in the irrigation season of 2006 and continued through the irrigation season of 2008. Monitoring did not occur in 2009 and 2010; MPM resumed in 2011.

Sand Creek @ Hwy 4 Bypass is one of the Coalition's fourth priority subwatersheds and management plan constituents include DO, SC, TDS, *E. coli*, chlorpyrifos, DD, DDT, diazinon, dieldrin, diuron, water column toxicity to *S. capricornutum* and *C. dubia,* and sediment toxicity to *H. azteca.* Management Plan Monitoring for this site was initiated in 2007 and continued through 2008. In 2011, MPM for high priority constituents during months of past exceedances took place and exceedance of the WQTL for dieldrin (May) and *H. azteca* sediment toxicity (March and October) occurred. In 2012, MPM is scheduled for chlorpyrifos (May and June), diazinon (January and July), dieldrin (May, June, and August), disulfoton (May, June and August), *C. dubia* toxicity (May-July), *S. capricornutum* toxicity (April and August), and *H. azteca* sediment toxicity (March and September).

The Coalition indentified targeted growers within this subwatershed and is scheduled to begin focused outreach in early 2012.

Terminous Tract Drain @ Hwy 12

Terminous Tract Drain @ Hwy 12 is a Core Monitoring location with the Terminous Tract Drain @ Hwy 12 Zone (Zone 3). Monitoring was initiated at the Terminous Tract Drain @ Hwy 12 site subwatershed in the storm season of 2005 and occurred continuously through 2011. Assessment Monitoring occurred at the site during 2010 and is scheduled to occur every third year (2013, 2016, etc.). Core Monitoring will take place at the site in 2012.

Terminous Tract Drain @ Hwy 12 is one of the Coalition's third priority subwatersheds and management plan constituents include DO, SC, TDS, *E. coli*, arsenic, chlorpyrifos, and water column toxicity to *S.capricornutum.* Management Plan Monitoring began at Terminous Tract Drain in 2010. In 2011, MPM continued for high priority constituents during months of past exceedances and an exceedance of the chlorpyrifos WQTL occurred (September). In 2012, MPM is scheduled for chlorpyrifos (August and September), water column toxicity to *S. capricornutum* (January, February, April and May), and sediment toxicity to *H. azteca* (March and September).

The Coalition also initiated its management practice tracking and outreach strategy during 2011 with targeted growers; a summary of current and recommended practices is included in the Third Priority Subwatersheds Summary of Management Practices section of this report. Management Plan Monitoring and outreach is scheduled to occur through 2013.

Unnamed Drain to Lone Tree Creek @ Jack Tone Rd

Unnamed Drain to Lone Tree Creek @ Jack Tone Rd is a rotating Assessment Monitoring location within the French Camp Slough @ Airport Way Zone (Zone 2). Monitoring was initiated at Unnamed Drain to Lone Tree Creek during the irrigation season of 2006 and has continued through 2011. Unnamed Drain is scheduled for Assessment Monitoring in 2030.

Unnamed Drain to Lone Tree Creek is one of the Coalition's first priority subwatersheds and management plan constituents include DO, SC, TDS, *E. coli,* copper, lead, chlorpyrifos, diuron, thiobencarb, simazine, water column toxicity to *C. dubia* and *S. capricornutum*, and sediment toxicity to *H. azteca.* Management Plan Monitoring was initiated at Unnamed Drain to Lone Tree Creek in 2007 and included additional monitoring for chlorpyrifos. During the 2008 irrigation season, MPM included upstream sampling at Unnamed Drain to Lone Tree Creek @ Wagner Rd for chlorpyrifos. Management Plan Monitoring occurred continuously from 2009 through 2011 during months of past exceedances for high priority constituents. From July 2010 through February 2011, additional monitoring for chlorpyrifos, diazinon and *H. azteca* sediment toxicity was conducted at Unnamed Drain to Lone Tree Creek @ Jack Tone Rd as part of DPR grant monitoring. Monitoring results from 2011 included exceedances of copper (May), chlorpyrifos (January and July) and *H. azteca* sediment toxicity (March). In 2012, MPM is scheduled to continue at Unnamed Drain to monitor for copper (April, May, July-September), chlorpyrifos (January, February, May-September, November and December), diuron

(January and February), simazine (January and February), *C. dubia toxicity* (January, February, and September), *S. capricornutum* toxicity (February, March, and May), and *H. azteca* sediment toxicity (March and September).

In addition to MPM, the Coalition completed its management practice tracking and outreach strategy to targeted growers within this subwatershed in 2008 and followed up with the growers in 2009 and 2010. However, due to the continued water quality impairments in the creek, the Coalition is planning to do additional outreach to four targeted growers in 2012. The Coalition is hopeful that this additional outreach will lead to improved monitoring results in 2012. A complete summary of management practices was included in the 2011 MPUR under the First Priority Subwatersheds Summary of Implemented Management Practices section.

Walthall Slough @ Woodward Ave

Walthall Slough @ Woodward Ave is a Core Monitoring location within the Lower San Joaquin Zone (Zone 5). Assessment Monitoring at Walthall Slough @ Woodward Ave began in 2009 and continued through 2010. Core Monitoring occurred in 2011 and is scheduled to continue through 2012. Walthall Slough @ Woodward Ave will rotate back into Assessment Monitoring in 2014.

Walthall Slough is one of the Coalition's fifth priority subwatersheds and management plan constituents include DO, SC, TDS, nitrates, *E. coli*, chlorpyrifos, HCH (delta), and sediment toxicity to *H. azteca*. Nitrates and chlorpyrifos were most recently added to the list due to exceedances of the WQTL in 2011. There were two exceedances of the WQTL for chlorpyrifos in 2011 (September and October). Management Plan Monitoring is scheduled to begin in 2012 for chlorpyrifos (September and October) and *H. azteca* sediment toxicity (March and September).