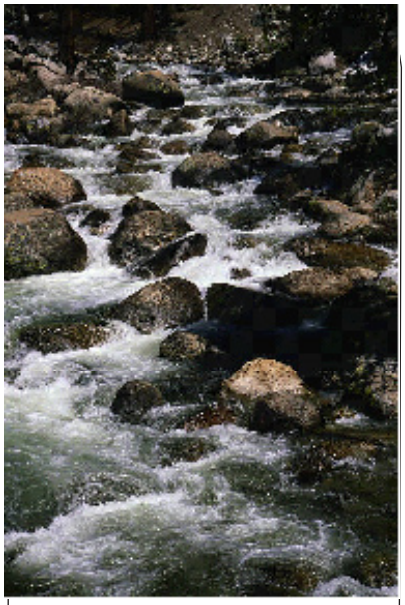

Irrigated Lands Waiver

Yolo County Farm Bureau Education Corporation

Subwatershed Program

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Volume 2, Issue 3

Monitoring Results Update

In the last newsletter we reported there were two toxicity exceedances in the April 2007 monitoring, one to *Ceriodaphnia* (water fleas) and one to *Selenastrum* (algae). Monitoring was conducted on Willow Slough Bypass at SP, Cache Creek at Diversion Dam and Shag Slough at Liberty Island Bridge. Limited monitoring was also conducted on Tule Canal at I-80.

Notices were mailed to growers informing them of the toxicity exceedances, and the results of further testing.

*15 May 2007 monitoring did not show any toxicity exceedances.
* June 2007 monitoring showed a toxicity exceedance to algae in Cache Creek at the Capay Diversion Dam. However, the source couldn't be identified or linked to any of the required pesticides monitored for under the Irrigated Lands Program.
* July 2007 also did not have any toxicity exceedances.

Yolo County test results continue to show high levels of boron, conductivity and E-coli in the water. These problems are being addressed through a plan submitted to the Regional Board last year.

Meetings For Growers and Landowners Scheduled

Meeting notices will be mailed to each landowner and grower in September. Please mark these dates on your calendar and plan to attend. We will review monitoring results, how Yolo County is responding, and what to expect in 2008.

The first three dates are morning meetings, and December meeting will be held in the evening. More information will be included in the flyer. Dates are subject to change as we still have to confirm the meeting locations in Clarksburg and Winters.

November 15th Winters
November 21st Woodland
November 28th Clarksburg*
December 12th Woodland (evening meeting)

*waiting for approval for the Clarksburg location

Full Compliance From Agricultural Coalitions on the Central Valley Regional Water Quality Control Board Participant Requirement

Press release from State Water Resources Control Board on August 9, 2007

After years of litigation about getting the names of growers in the agricultural coalitions, the Central Valley Regional Water Board has received all seven groups' participant listings.

This compliance is significant because failing to provide the lists by July 31 of each year results in fines.

When the Central Valley Regional Water Board renewed the Irrigated Lands Conditional Waiver in June 2006, it added a requirement that coalition groups in the program must submit electronic updated participant lists.

The data in the lists are being evaluated for totals of participating parcels, acres, and growers. Early analysis shows that there are more than 28,000 growers and 70,000 parcels totaling more than five million acres enrolled in coalition groups. This represents more than a 30 percent increase in participation from September 2006.

The Irrigated Lands Program protects water quality and helps agriculture meet water quality standards. Growers may join coalitions as an alternative to individual permits for waste discharges from their operations.

The Irrigated Lands Program requires coalitions to monitor, to identify water quality problems and to work with growers to address those problems. Growers are required to manage their operations and to carry out best management practices to prevent water quality problems and address existing problems.

As non-participating parcels are identified, the Executive Officer will issue warning letters under California Water Code section 13267 to get more information about operations on those lands, and then determine if regulatory coverage is required because of waste discharges from those operations.

Since March 2005, more than 1,400 warning letters have been issued, and more than 400 Notices of Violation were sent to land owners for failing to respond to the orders. More follow up to those who have not responded are being prepared. The California Water Code authorizes the Water Board to issue administrative civil liability of up to $1,000 daily for failing to

Reconciling Food Safety and Environmental Protection

by: Rick Landon, Yolo County Agricultural Commissioner

Yolo County is a leader in agricultural innovation. In addition to providing safe, quality produce, growers have taken a proactive approach to voluntarily improve water quality and meet environmental demands. The efforts of Yolo County growers and growers throughout the state to protect water quality and the environment may be compromised as some food safety guidelines, or interpretations appear to be in conflict with management practices intended to improve water quality and enhance natural habitat. Growers of raw agricultural commodities such as vegetables and nuts are caught in the middle between these competing priorities. In many cases they are being put in the position of having to choose between being able to sell their crops or protect the environment.

In response to grower concerns about this conflict the Resource Conservation District of Monterey County conducted a survey of more than 600 growers. The survey was co-sponsored by the Grower-Shipper Association of Central California, Central Coast Agriculture Water Quality Coalition, and the Monterey County Agricultural Commissioner's Office. The purpose of the survey was to better understand the impacts of the conflict and guide efforts to reconcile conflicting demands for food safety and environmental protection.

Ninety-one percent of survey respondents had adopted one or more conservation practices aimed to improve water quality and/or wildlife habitat. Sixty-three percent have voluntarily received technical assistance from a local resource agency and/or expert. The adopted practices included Cover Crops (72.1%), Storm Water Ponds (38.5%), Filter Strips (36.3%), Grassed Waterways (33.5%), Irrigation Reservoirs (30.2%, Tailwater Recovery Ponds (29.6%) and Hedgerows (25.7%).

On the other hand, to insure consumer health and minimize risks of contamination growers are being encouraged by buyers to eliminate the presence of vegetation, waterbodies, and wildlife near crops. These included removing wildlife (39%), removing non-crop vegetation (18.6%), and removing ponds or waterbodies (9.5%).

The results illustrate that growers are in the middle of a clear conflict between food safety measures and efforts to address water quality and the environment. Some growers are being encouraged to remove environmental practices for water quality to address food safety. The survey indicates that growers are very concerned and upset about being forced to choose between food safety and the environment. There is an opportunity for our local and state leaders to alleviate these conflicts through open dialogue, innovation and partnerships.

Sacramento Valley
Water Quality Coalition

What is the Coalition Up To, Besides Monitoring?

The Sacramento Valley Water Quality Coalition (Coalition) submitted its latest membership list to the Regional Water Quality Control Board on July 31. Coalition membership now stands at over 8,600 irrigators.

The Coalition and its 10 Subwatersheds are getting the word out to irrigators about the program. The Coalition and its 10 Subwatersheds, along with their partners, hold annual meetings, provide best management practices workshops to growers, distribute newsletters and provide exceedance notifications to growers (see article titled *Growers Told of Water Quality Exceedances*).

The Coalition recently distributed over 8,600 newsletters to Coalition members summarizing water quality monitoring results from 2006. Also, the Subwatersheds keep members up-to-date by distributing their own newsletters highlighting exceedances and best management practices that can be implemented to solve local problems.

When an exceedance occurs more than once in a three year period, the Coalition is required to develop and implement a "management plan". The Coalition currently has two plans in effect: the Diazinon Management Plan Diazinon Management and the Yolo Technical Report. The Coalition is in the process of developing a management plan for conductivity in Butte-Yuba-Sutter Subwatershed on Gilsizer Slough.

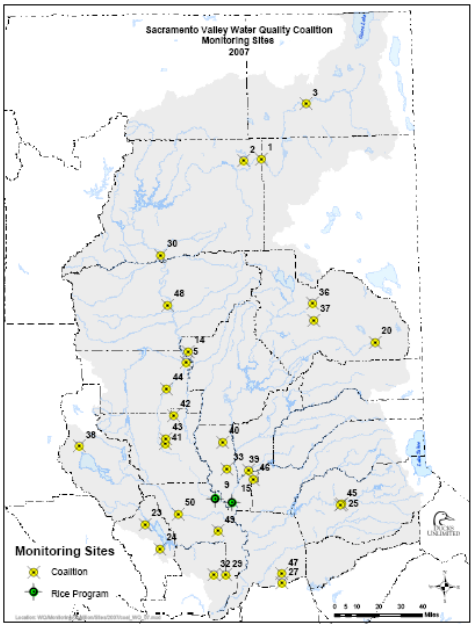
Date to Remember

Regional Water Quality Control Board
August 2
Data presentation

The Regional Water Quality Control Board (Regional Board) is reviewing monitoring data collected from 2004 to present under the Irrigated Lands Program. The Regional Board staff goals are to provide their Board Members with:

- a general understanding of the baseline water quality conditions in areas with irrigated agriculture in the Central Valley;
- information about data gaps, such as monitoring locations that require further investigation, and also about areas that they believe warrant additional management practice implementation;
- insight into the types of water quality impacts that appear to be more pervasive in agricultural drainages within the Central Valley; and
- reveal where they believe additional information is needed to help characterize the effects of irrigated agriculture on waters of the State.

Semi-Annual Report Storm Season 2006-2007



What Is The Coalition Doing About Exceedances?
To address specific water quality exceedances, the Sacramento Valley Water Quality Coalition (Coalition) and its partners developed two management plans, the *Diazinon Runoff Management Plan for Orchard Growers in the Sacramento Valley* and the *Yolo Technical Report*. In addition, the Coalition is currently conducting a *Bacterial Source Identification Study for* E. coli and has developed a *Landowner Outreach and Management Practices Implementation Communications Process for Monitoring Results (Management Practices Process)* to address exceedances that were not included as part of either of these management plans (visit www.svwqc.org for more details).

Monitoring
The Sacramento Valley Water Quality Coalition (Coalition) monitored 34 locations in the 2006-2007 storm season for various water quality constituents. The following information was obtained:

Physical Parameters

pH
During the 2007 storm season, pH was measured in 40 samples from 34 Coalition sites. In these samples, pH exceeded the Basin Plan maximum of 8.5 Standard Units (-log[H+]) in two Coalition samples collected from two different sites (Cache Creek at Capay Diversion Dam and Willow Slough Bypass in the Solano-Yolo subwatershed) and was below the 6.5 minimum limit in two samples from two different sites (Pope Creek and Capell Creek in the Lake/Napa subwatershed).

Dissolved Oxygen (DO)
DO was measured in 40 samples from 34 Coalition sites. Dissolved oxygen concentrations were above the Basin Plan minimum objective (5.0 mg/L) in all except one sample, and there was only one exceedance for this parameter at Coyote Creek at Tyler Road (Shasta-Tehama subwatershed). The initial exceedance was confirmed after recalibration and was associated with low water velocities, decaying aquatic vegetation and organic matter, and stagnant conditions at the site.

Conductivity
Conductivity was monitored in 38 samples from 33 Coalition sites. Conductivity exceeded the California recommended 2° MCL (900 uS/cm) for drinking water in one sample and the unadopted UN Agricultural Goal (700 uS/cm) in a total of three samples collected from three different sites. The conductivity objective is intended to apply to treated drinking water and are based on aesthetic acceptance by consumers of the water.

Total dissolved solids (TDS)
TDS were monitored in 32 samples from 27 sites. TDS exceeded the California recommended 2° MCL (450 mg/L) for drinking water in three samples collected from three sites (Walker Creek at County Road 48 in the Colusa Basin subwatershed and Willow Slough Bypass in the Solano-Yolo subwatershed and Lurline Creek in the Colusa-Glenn subwatershed). The TDS objective is intended to apply to treated drinking water and are based on aesthetic acceptance by consumers of the water.

Trace Elements

Total and Dissolved Trace Metals (arsenic, boron, cadmium, copper, lead, nickel, selenium, and zinc)
Trace metals were monitored in samples collected from 16 Coalition sites. Selenium exceeded the Basin Plan objective of 5 ug/L in one sample from Willow Slough Bypass (Solano-Yolo subwatershed). Boron exceeded the unadopted UN Agricultural Supply Goal (700 ug/L) at Cache Creek at Capay Diversion Dam and Willow Slough Bypass (both in the Solano-Yolo subwatershed). Boron is naturally high in the soil and groundwater in this drainage. Boron exceedances are being evaluated and addressed by a Technical Report for Yolo County.

Pathogen Indicators

E. coli
E. coli bacteria were monitored in 37 samples from 32 sites. Coliform bacteria numbers exceeded the single sample maximum objectives for *E. coli* (235 MPN/100mL) in 12 samples from 12 different Coalition locations (Capell Creek, Coon Creek at Brewer and Striplin, Dry Creek, Gilsizer Slough, Laguna Creek, Lower Snake River, Lurline Creek, McGaugh Slough, North Canyon Creek, Ulatis Creek and Wadsworth Canal).

The Basin Plan objectives are intended to protect contact recreational uses where ingestion of water is probable (e.g., swimming). Just because E. coli is detected in the samples does not necessarily mean that it is the strain that will make people sick. The coalitions are not required to determine the strain. In general, agricultural lands commonly support a large variety (and sometimes very large numbers) of birds and other wildlife. These avian and wildlife resources are expected to be significant sources of *E. coli* and other bacteria in agricultural runoff and irrigation return flows. Other potential sources include cattle, horses, and septic systems.

The Putah Creek drainage provides a specific example of the challenges that *E. coli* source identification presents in some drainages. The Putah Creek drainage in the Lake/Napa subwatershed has no irrigated agricultural sources of *E. coli*. Manures are not applied as nutrients in this drainage, and the overwhelming majority of irrigated agricultural lands have no grazing as a primary agricultural use or as a management activity. In this drainage, sources of *E. coli* therefore appear to be from non-irrigated lands, which could include wildlife, septic systems, or dryland range grazing activities in close proximity to the monitored creeks.

E. coli exceedances are being investigated by a watershed-wide study of the biological sources of *E. coli* contamination.

Water Column Toxicity

Ceriodaphnia and Selenastrum Toxicity
Ceriodaphnia and Selenastrum were monitored 24 times; exceedances occurred 1 time for Ceriodaphnia (Stony Creek in the Colusa-Glenn Subwatershed) and 1 time for Selenastrum (Ulatis Creek in the Solano-Yolo Subwatershed).

The reduction in Ceriodaphnia survival in the Stony Creek sample was not caused by organophosphate or triazine pesticides. Because the observed reduction in mortality was less than 50%, it was not possible to investigate the cause of toxicity. Other pesticides applied prior to the sample event in the Stony Creek drainage appeared unlikely to contribute significantly to the observed toxicity.

The reduction in *Selenastrum* cell growth in the Ulatis Creek sample is best explained by the detection of diuron, however this could not be confirmed. Other detected pesticides were well below concentrations considered to represent "safe" or no effect concentrations, and appear unlikely to have contributed to the toxicity. A number of unmonitored herbicides were also applied in the month prior to sampling, but appear less likely to have contributed to toxicity than diuron, based on total numbers of applications or relatively low toxicity to *Selenastrum*.

Pesticides

Pesticides were analyzed in 79 individual water column samples at 23 sites collected from December 2006 through March 2007. Analyses were conducted for organophosphates, carbamates, organochlorines, triazines, pyrethroids, glyphosate, and paraquat. There were five observed exceedance of pesticide water quality objectives: a single marginal exceedance of the proposed Basin Plan diazinon objective of 0.1 ug/L (Gilsizer Slough in the Butte-Yuba-Sutter subwatershed) exceedances occurred 2 times for DDE (Lurline Creek and North Canyon Creek), 1 time for DDD (Lurline Creek) and 1 time for DDT (Middle Creek in the Lake-Napa subwatershed).

Glyphosate and paraquat were not detected in any samples.

Nutrients

Nutrients monitored during the 2007 storm season included nitrate+nitrite nitrogen, total Kjeldahl nitrogen (TKN), ammonia, total phosphorus, and dissolved orthophosphate. Nutrients were monitored in at 22 different Coalition sites, and did not exceed water quality objectives at any sites in the 2007 storm season monitoring. Ammonia concentrations measured did not exceed the temperature and pH dependent national water quality criterion for this parameter in any sample. There are no water quality objectives (adopted or unadopted) for TKN, total phosphorus, or orthophosphate.

Monitoring & Reporting Program

Over the past two years, a Technical Issues Committee (TIC) has been working with Regional Water Quality Control Board (Regional Board) staff to refine the Monitoring and Reporting Program (MRP) requirements of the Irrigated Lands Program.

In April, the TIC thought they were close to having the revised MRP that would satisfy both the committee and the Regional Board staff and that staff was would be willing to take to the Regional Board for approval. However, before Regional Board's Executive Officer Pamela Creedon was willing to take it before the Regional Board she wanted it reviewed by a third party. Creedon directed staff to seek the services of a research organization with an expertise in the design of large, complex monitoring programs to conduct a technical review of the work conducted to date, and to consult with staff and the TIC during the development of the final draft MRP that will be presented to the Regional Board for its consideration.

"It is our desire to implement a scientifically based monitoring program that addresses the overarching goals of the Irrigated Lands Program designed to answer key management questions," said Pamela Creedon.

The review is being conducted by an independent consultant Brock Bernstein. Bernstein will prepare a report on the technical review. His findings and recommendations will be presented to the TIC, and the TIC will have the opportunity to review the report and provide comments. Bernstein had his first meeting with the TIC on June 23.

Due to this new approach, the MRP was not taken to the Regional Board in June, as originally planned, and will not likely go before them until 2008.

Environmental Groups File Lawsuit Opposing Coalition Groups

After the State Water Resources Control Board dismissed a petition for review of the Conditional Waivers of Waste Discharge Requirements for Discharges from Irrigated Lands (Irrigated Lands Program) submitted by the California Sportfishing Alliance and Baykeeper, the two groups filed a lawsuit in Superior Court on June 18 against the California Regional Water Quality Control Board – Central Valley Region (Regional Board) alleging that not enough is being done to keep agricultural runoff from polluting the waterways and harming fish.

The lawsuit alleges that the Regional Board's adoption of the waivers violates the California Environmental Quality Act (CEQA), state and federal endangered species acts and Porter-Cologne, California's water quality law. The suit goes so far as to say "these waivers are also contributing to damage to threatened and endangered fish" and that "there is 'take' occurring in the Bay/Delta of species at the present time", referring to the Delta smelt. The lawsuit also claims that coalitions of farmers have blatantly refused to comply with the minimal requirements of the previous 2003 waiver and that the Regional Board has failed to enforce the law in the face of significant noncompliance.

The environmental organizations are seeking the issuance of a writ of mandate "(1) ordering Respondent California Regional Water Quality Control Board - Central Valley Region ("Regional Board") to vacate and set aside the 'Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands' and -- (2) ordering the Regional Board to vacate and set aside a negative declaration prepared in conjunction with the Waiver and issued pursuant to those orders."

Lawsuits were previously filed by environmental groups in 2002 and 2003 seeking "first-ever controls on agricultural discharges to Central Valley waterways." DeltaKeeper had challenged the Irrigated Lands Program on the grounds that noncompliance could threaten water quality in the state's protected waterways. In her opinion, Judge Judy Hersher noted that "DeltaKeeper's objections are based upon speculation and not upon facts and their comments are not substantial evidence that the Waiver may result in potentially significant impacts."

NCWA, on behalf of the Sacramento Valley Water Quality Coalition, will file a motion to intervene in the latest lawsuit to protect the Irrigated Lands Program and the Sacramento Valley Water Quality Coalition's program. It is anticipated that the motion for intervention will be a cooperative effort with the California Rice Commission, the California Farm Bureau, the San Joaquin County & Delta Water, Eastside Coalition, and the Westside Coalition.

Growers Informed of Water Quality Exceedances

Letters are in the mail to hundreds of Sacramento Valley landowners who farm irrigated crops in seven watersheds where water quality exceedances were found in sampling performed in 2006. Notifying growers about exceedances of State water quality standards is one of the many requirements of watershed coalitions under the Irrigated Lands Program (ILP). Under the water monitoring program, the Sacramento Valley Water Quality Coalition (SVWQC) collected 156 samples from 31 waterways during the 2006 irrigation season. Fourteen sediment samples were also collected in September.

In addition to describing the types of exceedances, the Advisory Notice mailings, which are done in collaboration between the SVWQC and its 10 subwatershed groups, also included information on management practices with potential to address the exceedances.

While several farm inputs were identified as potential causes, many exceedances do not have readily identifiable sources linking them to farmers and crop production. Those parameters include pH and dissolved oxygen, both of which can be outside of normal ranges because of naturally occurring conditions in the waterways or changes in stream flow and temperature. Coalition efforts to identify sources are proceeding.

More certain, but not yet completely verified, are causes of sediment toxicity found in three subwatersheds. University of California scientists working throughout the Central Valley have linked sediment toxicity to pyrethroid insecticides. Pyrethroids have the characteristic of binding to soil particles washed from a treated field by irrigation drainage or storm water and accumulating in stream sediments. Coalition testing determines only if sediment is toxic but cannot identify specific causes of toxicity. However, the coalition has decided to be proactive in addressing sediment toxicity by distributing management practice information for pyrethroid insecticides. The practices focus on preventing sediment from moving off site and minimizing spray drift to waterways.

Exceedances of State standards for *E. coli* bacteria occurred in three coalition sites last summer. *E. coli* can originate from multi sources: manure runoff from pasture or irrigated crop land, wildlife, leaking septic systems and other sources. The SVWQC performed a DNA mapping study of *E. coli* taken from several sites in the Sacramento Valley region. Preliminary results showed that while some cow and chicken DNA was present, the highest levels in many waterways were from human sources. Until further information is known, the SVWQC encourages growers who apply or store animal manure to follow management practices to minimize movement of manure into waterways.

The only pesticide exceedances found were for simazine herbicide, chlorpyrifos (Lorsban) and diazinon insecticide, DDT and DDE. Simazine is a pre emergent herbicide used in orchards, vineyards, for roadside weed control and other weed management applications. SVWQC has contacted the herbicide manufacturers and will send to members in coming months the stewardship information they provide. As with other pesticides detected in waterways, any practice that minimizes water and sediment runoff after an application has proven to be the most effective management approach for herbicides. Information on chlorpyrifos management practices for row crops was distributed to growers upstream of the site were the insecticide was found. The DDT found in water samples likely originates from suspended silt particles washed from fields sprayed with DDT more than 30 years ago. DDT is very persistent in soils and preventing movement of silt to waterways is believed to have the best potential for mitigating DDT detections on water.

In the advisory notice mailings, growers are strongly encouraged to adopt management practices to prevent movement of farm inputs into waterways. A second exceedance can cause the waterway to be placed under a "Management Plan," which carries increased scrutiny of farming practices upstream of the sampling site and can lead to stricter enforcement measures by the Water Board.

Provided by: Parry Klassen
Watershed Coalition News, Summer 2007
http://www.curesworks.org/newsletter.asp

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Table 1. Exceedances of chemical and microbiological water quality objectives for samples collected May 15-16, 2007

Site ID	Sample Date	Analyte	Result	Units	WQO[1]	WQO Basis[2]
Tule Canal at I-80		Conductivity	921	µS/cm	900[(4)], 700[(5)]	Narrative
Cache Creek at Diversion Dam		Boron	806	ug/L	700	A&W
Willow Slough Bypass		Boron	1500	ug/L	700	A&W

Table 2. Exceedances of chemical and microbiological water quality objectives for samples collected June 19-20, 2007

Site ID	Sample Date	Analyte	Result	Units	WQO[1]	WQO Basis[2]
Cache Creek at Diversion Dam		TDS	530	Mg/L	500	BPN
Cache Creek at Diversion Dam		Boron	770	ug/L	700	A&W
Willow Slough Bypass		Boron	1700	ug/L	700	A&W

Table Notes:

1 Water Quality Objective or Narrative Interpretation Limit

2 WQO Basis: Sources of Adopted Objectives: *BP* = Central Valley Basin Plan; BP PG Basin Plan Performance Goal; *CTR* = California Toxics Rule; Sources of unadopted limits used to interpret Basin Plan narrative objectives: *BPA* = Basin Plan Amendment (unapproved); *A&W* = UN Agricultural Supply Goal (Ayers and Westcott, 1986); *BPN* = other narrative interpretation limits, including recommended 2˚ MCLs and advisory limits;

3 Indicates whether site and parameters are currently being addressed by an ongoing management plan, study or TMDL.