

SVWQC Salinity Management Plan Briefing

Materials for April 23, 2012 CV-SALTS Technical Advisory Committee Meeting

SVWQC SURFACE WATER MANAGEMENT PLANS FOR SALINITY

The Salinity Management Plan addresses exceedances of total dissolved solids (TDS), electrical conductivity (EC), and boron. The primary mechanism for developing and implementing a salinity management plan will be [is] the Coalition's continued participation in CV-SALTS.

Table 1. SVWQC Salinity Management Plans, as of March 2012

County	Water Body	Analytes
Amador	Dry Creek	TDS
Sutter	Gilsizer Slough	EC
Colusa	Colusa Drain	EC
	Freshwater Creek	EC
	Lurline Creek	EC; TDS
	Sycamore Slough	EC; TDS
Glenn	Logan Creek	TDS
	Stone Corral Creek	EC
Sacramento (Delta)	Grand Island Drain	EC; TDS
Solano	Ulatis Creek	EC; TDS
	Z Drain	EC; TDS
(Delta)	Shag Slough	EC
Yolo	Cache Creek	EC; <i>Boron</i>
	Willow Slough	EC; TDS; Boron
(Delta)	Tule Canal	EC; TDS; Boron
Plumas (Upper Feather River)	Middle Fork Feather River	EC

Geographic Pattern: Primarily west side of Sacramento Valley in regions where use of groundwater for agriculture is common or predominant. Exceptions include Delta locations, Dry Creek in Amador County (low flows, bats?), and Gilsizer Slough in Sutter County (urban runoff influenced location). Middle Fork Feather River is another special case (SSO of 180 μ mhos/cm, 10-year 90th percentile).

MANAGEMENT PLAN TASKS AND DELIVERABLES, INCLUDING COORDINATION WITH CV-SALTS

1. **Review data and regulatory basis for exceedances**
2. **Source identification**
 - a. The major sources of salinity in the Central Valley have already been categorically identified. The Coalition will support additional source characterization for the CV-SALTS program through the ongoing ILRP monitoring effort.
 - b. Data will be compiled to characterize salinity characteristics of irrigation supply waters, if these data have not already been compiled by the CV-SALTS program.
 - c. Identify areas and drainages with elevated salinity.
 - d. Compile information about potentially salt-sensitive crops grown in these drainages.
 - e. Source Evaluation Report: The scope of this report will be determined in coordination with ILRP staff and will depend in part on types of information determined to be useful for the CV-SALTS process.
3. **Management practice implementation**
 - a. Meetings with landowners and/or growers to discuss exceedances, agricultural and non- agricultural salinity sources, options for relevant salinity management practices, and management plan requirements and goals.
 - b. Information will be developed through surveys to document salinity management practices already in place in the coalition subwatersheds. This information is intended to support CV-SALTS efforts to determine whether implementation of additional management practices is appropriate and feasible, and to establish goals for additional management practice implementation. *Identification of options for appropriate management practices will be coordinated primarily with CV-SALTS Technical Advisory Committee.*
4. **Implementation Schedule**
 - a. Developed through coordination with CV-SALTS.
5. **Completion Criteria And Performance Goals (TBD)**
6. **Evaluation Of Management Plan Effectiveness (TBD)**
7. **Monitoring**
 - a. Coalition ongoing monitoring effort will continue to routinely monitor EC, TDS, and boron;
 - b. Additional monitoring may be conducted for drainages that are determined not to have sufficient available data to characterize EC, TDS, and boron in irrigation supply waters.

ILRP WDR TIMELINE FOR SVWQC

Schedule for writing the new Sacramento Valley order (as of December 2011)

- Develop WDR – Apr - Nov 2012
- Regional Board’s Internal Draft - Nov 2012
- Interested Party Review - Nov - Dec 2012
- Revise Draft WDR – Jan – Feb 2013
- External Public Review - Feb - March 2013
- Comment Responses - April 2013
- Hearing Date - June 2013

SVWQC GROUND WATER DATA COLLECTION REQUIREMENTS FOR WDR

Groundwater Assessment Report (Due Summer/Fall of 2014)

The purpose of the Groundwater Assessment Report (GAR) is to provide the technical basis informing the scope and level of effort for implementation of the Groundwater Monitoring Strategy. The three main objectives of the GAR are to:

1. Identify where known groundwater quality impacts exist for which irrigated agricultural operations are a potential contributor or where conditions make groundwater more vulnerable to impacts from irrigated agricultural activities (high vulnerability areas)
 - a. Areas of Elevated Salinity or Nitrate in groundwater
 - b. High Vulnerability areas (DPR and SWRCB GWPA definitions)
 - c.
2. Produce a prioritization of high vulnerability areas, and
3. Evaluate the merit and feasibility of incorporating existing groundwater data collection efforts and their corresponding monitoring well systems to achieve the objectives of this Order and support its groundwater monitoring requirements.

Minimum requirements for the GAR:

- **Detailed land use information** with emphasis on land uses associated with irrigated agricultural operations. The information shall identify the largest acreage commodity types in the third-party area, including the most prevalent commodities comprising up to at least 80% of the irrigated agricultural acreage in the third-party area.
- **Depth to groundwater**, provided as a contour map(s).

- **Groundwater recharge information**, including identification of areas contributing recharge to urban and rural communities where groundwater serves as a significant source of supply
- **Soil survey information**, including significant areas of high salinity, alkalinity and acidity
- **Shallow groundwater constituent concentrations** (potential constituents of concern include any material applied as part of the agricultural operation, including constituents in irrigation supply water [e.g., pesticides, fertilizers, soil amendments, etc.] that could impact beneficial uses or cause degradation of high quality waters).

SALT SENSITIVE CROP INFORMATION COLLECTED

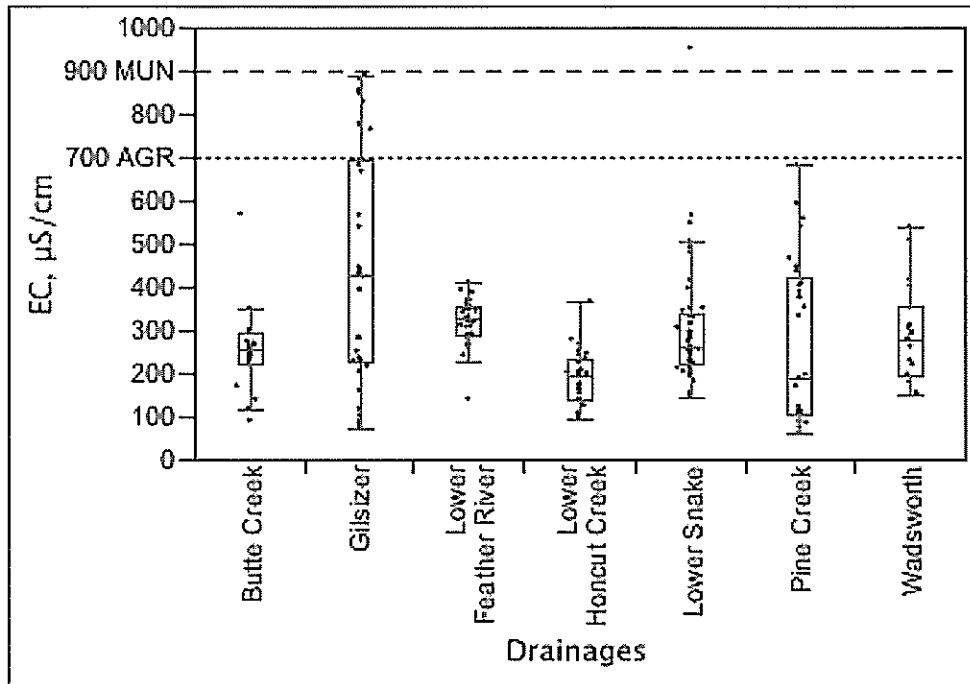
Initial effort has been to review County Crop reports for sensitive crops. Sensitivity was based on ratings compiled in *Irrigation Water Salinity and Crop Production* (Grattan, UCCE ANR Publication 8066) and Maas and Grattan, 1999). Acreage and percentages of relatively sensitive crops, by county are summarized in Table 2.

Depending on WDR and CV-SALTS needs, locations of sensitive crops can be localized to Section level accuracy. GIS accuracy (beyond TRS) would require substantially more effort. Primary data sources for this effort would be PUR permit system data.

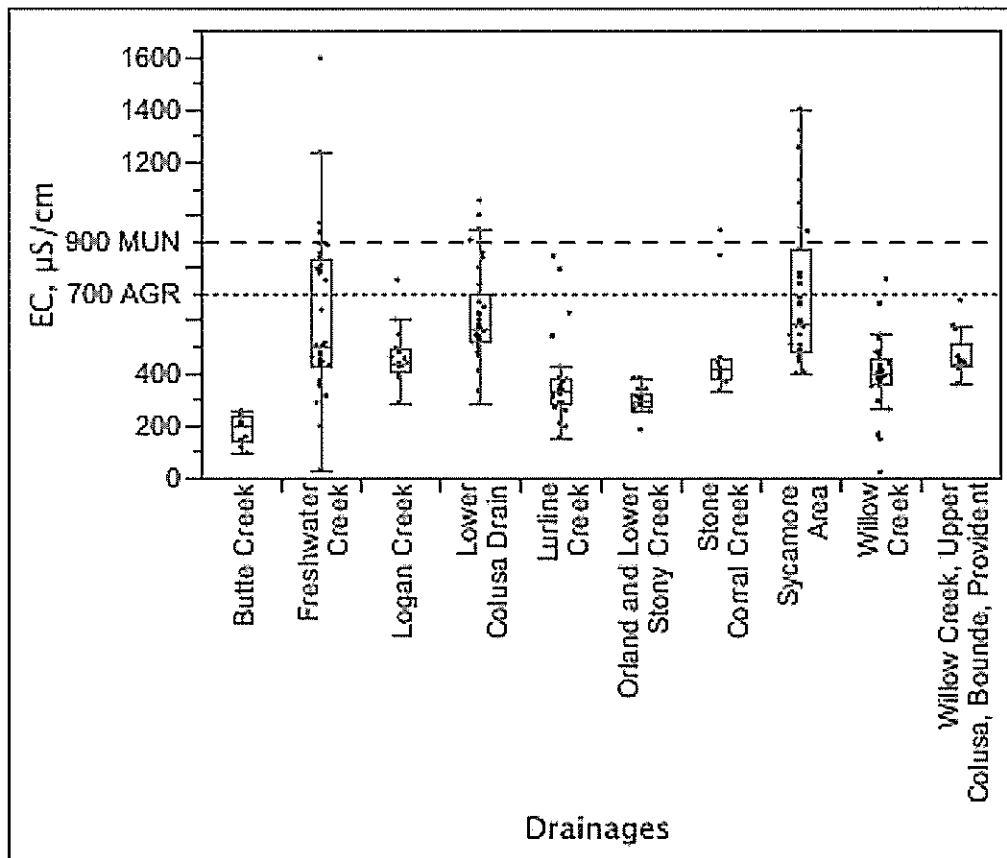
Table 2. Sensitive Crop Acreage, by County

County	Sensitivity Level, µmhos/cm, irrigation water	Sensitive Crops	Acres	Percent of Acres Planted
Colusa	<1000	Almonds	36050	7.50%
		Beans	5060	1.05%
		Carrots;	320	0.07%
		Miscellaneous (mixed)	19060	3.96%
		Onions;	380	0.08%
	1000-1500	Alfalfa	12300	2.56%
		Corn	650	0.14%
Tomato		18440	3.83%	
Total			92260	19.19%
Glenn	<1000	Almonds	32671	6.98%
		Beans	2542	0.54%
		Citrus;	429	0.09%
		Miscellaneous (mixed)	924	0.20%
	1000-1500	Alfalfa	15135	3.23%
		Corn	15140	3.23%
Miscellaneous (mixed)		330	0.07%	
Glenn Total			67171	14.35%
Plumas	1000-1500	Alfalfa	6000	3.72%
Total			6000	3.72%
Sacramento	<1000	Miscellaneous (mixed)	8609	6.84%
		Strawberries	80	0.06%
	1000-1500	Alfalfa	16005	12.72%
		Corn	31548	25.07%
		Tomato	2597	2.06%
Total			58839	46.75%
Solano	<1000	Almonds	3132	0.91%
		Beans	1060	0.31%
		Miscellaneous (mixed)	4626	1.34%
		Strawberries	24	0.01%
	1000-1500	Alfalfa	27121	7.84%
		Apricots	54	0.02%
		Corn	11173	3.23%
		Miscellaneous (mixed)	1046	0.30%
		Peaches	98	0.03%
Tomato	11000	3.18%		
Total			59334	17.15%
Yolo	<1000	Almonds	12828	3.39%
		Miscellaneous (mixed)	14218	3.76%
	1000-1500	Alfalfa	42934	11.34%
		Corn	16260	4.29%
		Tomato	32959	8.71%
Total			119199	31.48%

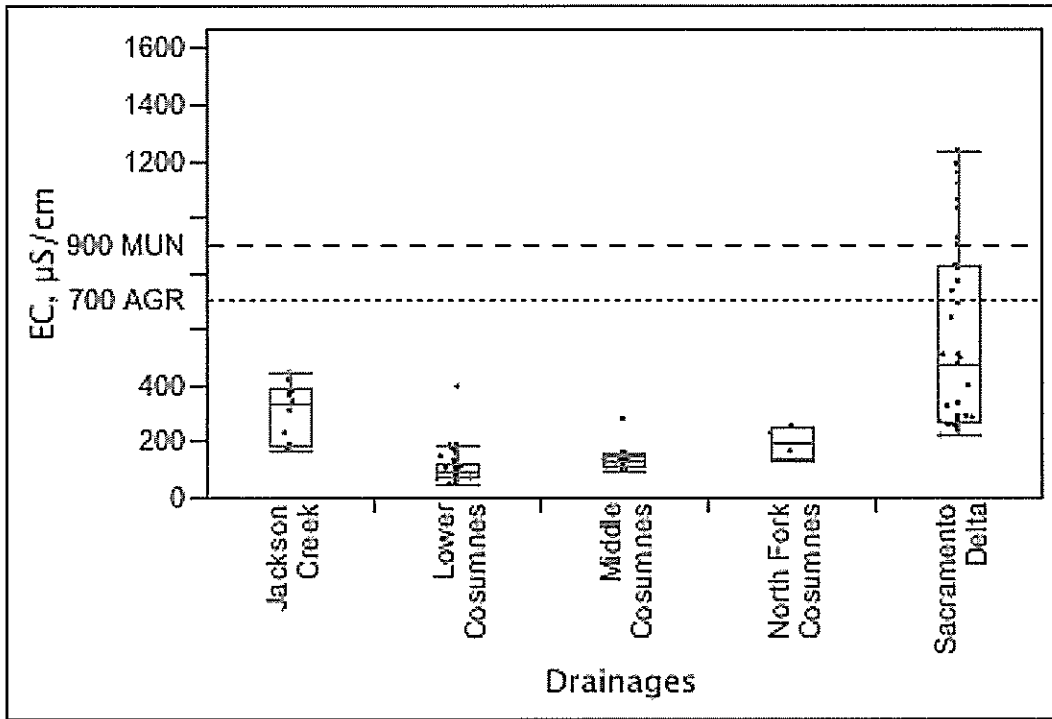
SUBWATERSHED == "BUTTE YUBA SUTTER"



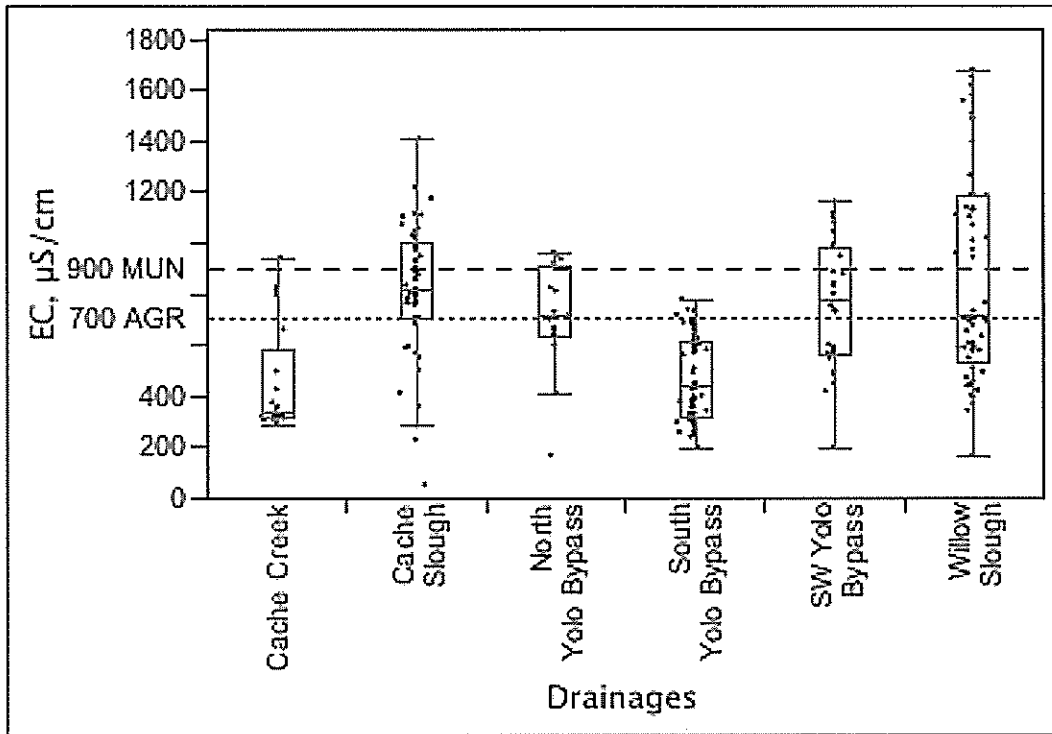
SUBWATERSHED == "COLUSAGLENN"



SUBWATERSHED == "SACRAMENTO AMADOR"



SUBWATERSHED == "SOLANO AND YOLO"



SUBWATERSHED == "UPPER FEATHER RIVER"

Oneway Analysis of EC, $\mu\text{S}/\text{cm}$ By Drainages

