CV-SALTS – A Stakeholder Program for Salinity Management and the Critical Role it Plays in California's Recycled Water

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Background

Managing salinity and nutrients is critical to all users of the waters of the Central Valley. These waters are used directly as drinking water, for commercial and industrial uses and for aquifer recharge throughout much of California. Water from the Central Valley is used directly by approximately 25 million residents of California. The quality and reliability of this water supply is of critical importance to all users including the environment shown by the figure below.[1]

Indirectly, Central Valley waters are utilized throughout all of California and around the globe. Agricultural production requires a significant percentage of Central Valley waters and its exports are exported to every state and almost every country in the world. Over 50% of almonds, pistachios, walnuts, and plums produced are exported to the European Union and Japan. Over 50% of cotton is exported to China and Turkey. Additionally, Canada is a significant importer of Central Valley produce and California's number one export country in 2007. Many agricultural products that consume significant Central Valley water are majority export crops. In all, 28% of all crops produced in 2008 were exported.[2] Therefore managing salinity and nutrients is critical to all Californians and users of Central Valley waters worldwide.

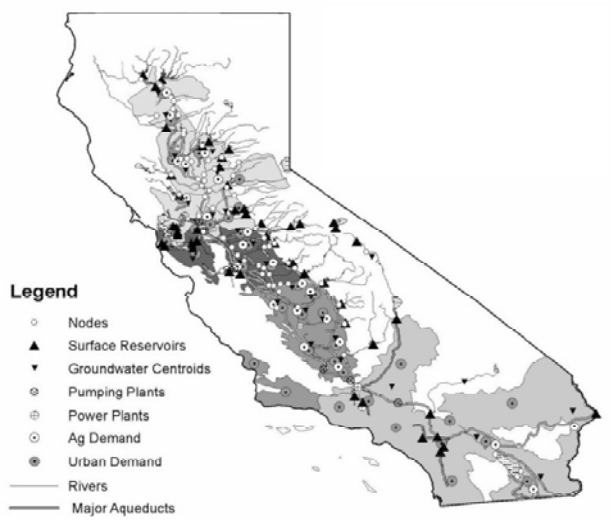

Figure 1 Water Supply and Usage from CALVIN Model

Why is Salinity an Important Issue for Users of Central Valley Water?

California must have a reliable supply of quality water. Elevated levels of salinity in drinking or irrigation water can significantly reduce utility of the water and reduce yields for many crops. Eventually salinity may result in the abandonment of farm lands or costly treatment for drinking water once used to meet discharge limits. In addition to urban areas, food processors, dairies, and wineries are also directly affected. As salinity levels rise in surface waters and groundwater in the region, users will be subject to much more stringent wastewater discharge permit standards that may be difficult or impossible to attain in an economic manner.

How Big is the Salinity Problem?

Salinity is a problem that tends to grow relatively slowly, but eventually can lead to disastrous results. Over 15.5 million tons of salt are brought into or mobilized in the waters of the Central Valley of California each year. Because there are few outlets for salt to move out of the Valley they continue to build up in the soil and waters of the region. This imbalance cannot be sustained over the long term and threatens the long-term future of agriculture and food processing. A recent study found that if nothing additional is done to address salinity; the impact on the economy will be significant. The researchers estimated that, comparing economic conditions in the year 2030 with 2005 levels, output from irrigated agriculture could decline by $1.2 billion due to higher salinity levels, and the output from food processors and dairies may be $133 million and $159 million lower respectively. These lower levels of agricultural output alone could reduce aggregate employment and income across most parts of the Central Valley.[3]

Where Does All the Salt Come From?

The salt comes from natural sources and human activity. A large portion of the salts are brought into the Central Valley with imported water. Salt and nitrate also enter the system in fertilizers, chemicals, detergents, waste products and various other sources. Evaporation and consumptive use both result in water being removed and salts being left behind. To better identify salt and nutrient sources CV-SALTS has a Pilot Implementation Study ongoing to pioneer methodology and demonstrate important sources in the Central Valley.[4]

CV-SALTS a Stakeholder Led Approach

While salt and nutrients are critical to all users of Central Valley waters; in-valley users that rely on the water directly or those who discharge to Central Valley waters are the most affected. To help move the basin plan revision process forward, CV-SALTS (Central Valley Salinity Alternatives for Long-Term Sustainability) was formed by the State Resources Control Water Board (SWRCB) and Central Valley Water Board (CVRWQCB) to work with all stakeholders to develop a salt management plan and update the regional basin plans. Affected users and groups lead CV-SALTS with the SWRCB, CVRWQCB and other partners. The affected users have also formed the Central Valley Salinity Coalition (CVSC) to bring all affected users of Central Valley waters together to provide the policy and science needed to develop and implement management alternatives addressing these problems. The organization of these groups is depicted in the chart at right and they are all signatories to a Memorandum of Agreement.[5]

The focus of all the work is on developing policies based on proven science and sound economics that are consistent with the Porter Cologne Act and Clean Water Act. The CV-SALTS initiative was modeled after a similar effort in the Santa Ana region that brought together a diverse set of interests to develop a comprehensive salt management plan.

What is the Central Valley Salinity Coalition?

The Central Valley Salinity Coalition (CVSC) is a 501 C-6 non-profit coalition of public agencies, businesses, trade associations, cities and counties, and other partners.[6] CVSC was formed in July 2008 to organize, facilitate and fund the efforts needed for the efficient management of

salinity in the Central Valley. CVSC closely coordinates its activities with CV-SALTS. This broad Coalition of users of Central Valley water lead this important effort.

Why Does CV-SALTS Need Funding? How Much is Needed?

Salinity is a large and complex issue and it will require substantial resources to determine the scope of the problem, explore options for mitigating or removing salt from the Valley, and to develop a comprehensive long-term plan of action. Central Valley Water Board staff and committee members estimate that the total cost of collecting the data, conducting the necessary studies, vetting the analysis with stakeholders, and revising the basin plans will require up to 50 million dollars over the next 5-6 years[7]. The SWRCB and CVRWQCB are contributing significant resources, along with contributions from the stakeholders participating in the Central Valley Salinity Coalition. However, the funds raised from these sources will likely not be sufficient, so water supply and agricultural interests need other government agencies to engage and help contribute funds to solving this important issue.

Coordination with other Regulatory and Non-Regulatory Efforts

The Executive Committee has identified over 60 linked, related, interdependent, and associated programs, projects and efforts within the Central Valley[8]. Beyond these there are hundreds of permits and waste discharge requirements that are dependent on the salt and nutrient sections of the Basin Plan. The programs are diverse, from the Bay Delta Conservation Plan to the Irrigated Lands Program and from the San Joaquin River Restoration to the Statewide Recycled Water Policy. The Executive Committee with the Technical Advisory Committee is condensing these into a draft matrix that identifies the coordinating contacts and principal effects of the efforts. This will be used to coordinate and cooperate with these efforts.

Recycled Water Policy and Salt and Nutrient Management Plans

The CV-SALTS process is the program process the Regional Board has approved for the development of recycled water policy Salt and Nutrient Management Plans (SNMP) as required by the SWRCB in the Recycled Water Policy in January 2009.[9] Project proponents of any recycled water project for which a SNMP is beneficial shall work through CV-SALTS. The Executive Committee has established the process below for proponents or stakeholder groups working on recycled water projects or management plans:

1. Regional Board will refer the proponents to the CV-SALTS Process
2. SNMP groups will be coordinated active participants in CV-SALTS and financially participate in the Central Valley Salinity Coalition to support costs for the overall program, for inclusion of the project and to gain the benefits afforded in the eventual basin plan amendments.
3. SNMP groups will propose the area of benefit or impact where they wish to be responsible. They will provide a work plan and timetable for the data and planning they are preparing to undertake and will incorporate issues and requirements provided by CV-SALTS in order to integrate their plan into the Basin plan amendment for the region. The workplan will be approved by CV-SALTS with participation from the Regional Board.
4. SNMP groups will be responsible for all needed items that are not included in the CV-SALTS Work Plan Outline.
5. SNMP groups will provide regular updates of data, information and progress to the appropriate CV-SALTS committee.

6. A preliminary or draft report will be presented to the appropriate CV-SALTS Committee and include the required information to be integrated into the regional basin plan amendment.
7. SNMP groups will be responsible to implement such projects as required by the timeline in the implementation plan of the basin plan amendment
8. CV-SALTS commits to integrate the SNMP group projects and plans into the final Salt and Nitrate Management Plan and incorporate it into the resulting Basin Plan Amendment if all requirements and deadlines are met.

Conclusion

The CV-SALTS Initiative is a large and complex multi-year program involving hundreds of stakeholders and requiring significant resources in both planning and implementation. While difficult, no other program offers the opportunities for working collaboratively to reduce duplication of effort, meeting multiple objectives and economically protecting the critical beneficial uses of Central Valley waters.

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[3] Howitt, Richard, University of California Davis, Economic Impacts of Central Valley Salinity for CV-SALTS March 2009 – Last accessed 12/15/2009
http://www.swrcb.ca.gov/rwqcb5/water_issues/salinity/programs_policies_reports/econ_rpt_final.pdf

[4] Larry Walker Associates for CV-SALTS, Salt and Nitrate Source Pilot Implementation Study, 12/21/2009 - http://www.cvsalinity.org/index.php/component/content/article/18-events/60-admin

[5] Central Valley Salinity Coalition, Memorandum of Agreement among the State Water Resources Control Board, Central Valley Regional Water Quality Control Board and Central Valley Salinity Coalition 12/10/2009 - http://www.cvsalinity.org/index.php/agendas/doc_download/92-cv-salts-memorandum-of-agreement-moa

[6] Central Valley Salinity Coalition, Coalition Membership Update 12/01/2009 – Last accessed 12/19/2009 http://www.cvsalinity.org/index.php/background/1-background/6-membership

[7] Central Valley Salinity Coalition, CV-SALTS Executive Committee, Work Plan Outline with Cost and Schedule Estimates, 07/2009 - http://www.cvsalinity.org/index.php/documents/doc_download/225-cv-salts-workplan-outline-with-cost-schedule

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