



# An Accelerated Regional Salinity Management Approach to Protect Beneficial Uses in the Sacramento River Basin

July 15, 2021

The Sacramento Valley Water Quality Coalition (Coalition) is advancing a regional salinity management approach with a detailed [Characterization of Salinity in Surface and Groundwater](#) to the Regional Water Quality Board that will accelerate and focus proven salt management practices in the Sacramento River Basin for beneficial uses under the Porter-Cologne Water Quality Act and the Basin Plan Amendment. The regional approach and subsequent implementation will address the goals in the Regional Board's Salt and Nitrate Management Plan (SNMP) to protect beneficial uses by: 1) maintaining water quality that meets applicable water quality objectives and pursuing long-term managed restoration where reasonable, feasible and practicable; 2) controlling the rate of degradation through a "managed degradation" program; and 3) implementing salinity management activities to achieve long-term sustainability and prevent continued impacts to salt sensitive areas. This includes salt management practices described in the CV-Salts technical reports.

This regional approach builds on the culture and strong partnerships in the region with water suppliers, local governments, landowners and conservationists—all working together with state and federal agencies to ensure safe drinking water, healthy aquatic life and reliable water supplies for farms and ranches as described in [Ensuring High Quality Water in the Sacramento River Basin for Communities, Ecosystems, and Farms](#). For generations the communities and farming families in the Sacramento River Basin have cultivated a shared vision for a vibrant way of life throughout the region that depends upon high quality water for all forms of life. The Sacramento River Basin is sourcing our sustainable future through responsible management of the essential resource that millions of birds, hundreds of thousands of fish, thousands of farms and millions of people all rely on—water. The region's leaders and their families live, work and play in the Valley and have a direct interest in ensuring high quality water—including salts—for all these purposes.

## CHARACTERIZATION OF SALINITY IN SURFACE AND GROUNDWATER

The *Characterization of Salinity in Surface Water and Groundwater* is the technical support for the regional approach. With its extensive data and adaptive prioritization, this approach evaluates and prioritizes resources based on threats to water quality and features the following:

### Low Salinity Source Water for Irrigation

The sources of irrigation water in the Sacramento River Basin are a combination of both surface and groundwater, the relative proportions of each depending on location and the previous winter's precipitation. The salinity of the source water varies across the valley, with the lowest salinity water originating in the Sierra Nevada Mountains and the southern Cascade Range reflecting the granitic and volcanic sources respectively. Saltier irrigation water originating in the mineral rich sedimentary rocks of the Coast Range provides water to the southwest portion of the region. An extensive network of irrigation supply canals has been constructed to serve high quality (low salinity) water to most of the Sacramento River Basin, except for the southwest part of the Valley. In this area (i.e., Yolo and Solano) growers have adjusted their cropping and irrigation management to fully utilize the slightly saltier surface and groundwater, growing a full range of crops with no loss of yield.



### Low Salinity Discharges

With the relatively abundant precipitation and distribution of low salinity surface water in the region, discharges from irrigated agriculture are high quality as evidenced by the reduction in the concentration of salinity in the groundwater and documented in the Salt and Nitrate Management Plan technical analysis. This reduction is particularly evident on the west-side of the region, where the Tehama Colusa Canal has brought high quality irrigation water to growers, which in turn has significantly reduced salinity compared to the salinity of the groundwater prior to 1969.

### A Robust Antidegradation Analysis and a Managed Degradation Program

The leaders in the Sacramento River Basin are committed to maintaining high quality surface and groundwater throughout the region. Water quality has improved in a majority of the Sacramento River Basin since 1969, largely as a result of water supply management throughout the region. Comparisons

indicate that the surface water quality has remained substantially the same across the entire Sacramento River Basin over the last 100 years. When groundwater quality is compared using salinity measurements taken prior to 1969 and salinity measurements taken over the last 20 years, the vast majority of the region shows improved water quality, i.e., lower salinity in groundwater recently compared to before 1969. There are a few isolated locations where groundwater degradation has occurred, with these locations generally corresponding to point source discharges. Certain locations in the southwest part of the Sacramento River Basin have experienced an increase in salinity in the decades since 1969. These areas correspond to the areas irrigated with higher salinity water originating from the Coast Range with its high mineral content in sedimentary rock. This characterization and the evaluation of antidegradation of surface water and groundwater is described in detail in the [Characterization of Salinity in Surface Water and Groundwater](#).



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## FOCUS ON YOLO AND SOLANO

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The southwest portion of the Coast Range generates water with the highest concentration of salt, which has been known for a long time. After tens of thousands of years of water draining through the Coast Range, the groundwater under the southwest portion of the Valley has elevated salinity. Adaptive prioritization suggests that we focus our resources on the waters in Yolo and Solano Counties that require the most attention with respect to water quality.

## DELTA WATER QUALITY

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Salinity in the Delta is managed pursuant to SWRCB D-1641. The [Characterization of Salinity in Surface Water and Groundwater](#), as well as previous studies of salt mass balance developed for the Regional Water Board, show that the Sacramento River Basin has minimal contributions to Delta salinity and flows are used to manage salinity in the Delta. Water suppliers in the Sacramento River Basin are working closely with other water suppliers and state and federal agencies to advance [Voluntary Agreements](#) to address D-1641 and improve fish and wildlife and water supply reliability throughout the state. The voluntary agreements will help address salinity in the Delta.

## ADVANCING A REGIONAL APPROACH FOR WATER RESILIENCE IN THE SACRAMENTO RIVER BASIN

NCWA and the Coalition will bring leading landowners and water suppliers together to advance the approach and focus on implementation in the areas where additional attention is necessary. As the technical information supporting this regional approach shows, the key to addressing salinity is good conjunctive water management of surface and groundwater resources. As part of this effort, the Coalition will provide an annual briefing in the fall to the water resources managers, other water leaders, and County Farm Bureaus in the region to provide the monitoring results from the past year and to coordinate a response in areas that need additional attention.

This regional approach is consistent with the Governor's Water Resilience Portfolio, which provides, "water resilience will be achieved region by region based on the unique challenges and opportunities in each area" and "state government must focus on enabling regional resilience." "A one-size fits-all approach to building water resilience does not work...rather, effective water management and preparing for the future are best achieved at a regional scale." Moving forward, state-regional partnerships that advance broad, multi-benefit projects are critical to achieving water resilience." State agencies will "support regionally-based salinity and brine management programs to improve water quality and supply reliability." (8.9) The Executive Order specifically directed state agencies to "encourage regional approaches among water users sharing watersheds," which forms the basis for this approach as part of a larger program for [\*Ensuring High Quality Water in the Sacramento River Basin for Communities, Ecosystems and Farms.\*](#)

