History of Salinity Management in Southern California

By
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Quick History of Efforts to Control Salinity

- MWD in the 1950’s “softened” Colorado River water” at the Weymouth Water Treatment Plant
- LACSD built brine line to Kaiser Steel mill and SCE Entiwanda power plant and Weymouth TP to bypass upstream water recycling plants
- President Nixon treaty with Mexico for Colorado River “Minute 242”
- 1972 Colorado River Salinity Control Act
- Mid–1970’s State Water Project began
- Regional Boards “Basin Plans” required use of SWP (e.g., Santa Ana River)
- Santa Ana River Brine line (1970s built to export salt)
Salinity Fundamentals:

- Removing Salt from Water Uses A Lot of Energy
- It is therefore, relatively expensive
- Prevention is much more cost effective (Colorado River, water softeners, Delta diversions from Sacramento River)

Salinity Management Study

- MWD and US Bureau of Reclamation funded
- Regional collaborative study (1997–1999)
- Comprehensive analysis of salinity problems
- Evaluation of alternatives and strategies
- Recommended Policy (source control on CR and SWP, watershed solutions, brine and desalter projects)
- Action Plan—Salinity Coalition advocacy, research, legislation, funding.
Colorado River Salinity Control Program funding and other actions
Blending target of 500/mg/L achieved
State Water Project activities, BDCP could reduce TDS from 270 mg/L to 100 per mg/L
Integrated water resources planning should focus on longterm salt balance
Brine lines, gw desalters, water softeners and other source control strategies
Regional Salinity Management Efforts

<table>
<thead>
<tr>
<th>Year</th>
<th>Description</th>
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<tbody>
<tr>
<td>1990s</td>
<td>Groundwater desalters</td>
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<tr>
<td>1997</td>
<td>500 mg/L blending strategy</td>
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<tr>
<td>1999</td>
<td>MWD adopts Salinity Management Action Plan</td>
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<td>2000</td>
<td>Southern California Salinity Coalition formed</td>
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<td>2001</td>
<td>Multi-State Salinity Council</td>
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<tr>
<td>2002–11</td>
<td>Funding and Control of Sources of Salinity --- brine concentrate research, water softener ordinances and rebates, watershed management strategies (e.g., Calleguas Creek)</td>
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Irrigation Salt Management Assistance

- Salinity Guide for Irrigation (NWRI and WateReuse)
- Recycled Water Training and Technical Assistance
- Ongoing Research on Irrigation Practices at Cal Poly Pomona, UCR, and UC Davis
- Plant science and irrigation management (Rancho Santa Ana Botanical Gardens)
Other Salinity Coalition Activities

- Regional Boards Salt and Nutrient Management Plans from the SWRCB Recycled Water Policy (2009)
- Brine Concentrate research
- Pre-treatment and wastewater treatment strategies (SCAP)
- Membrane technologies and other low energy salt removal technologies
- Water Softener Ordinances and Rebates

Salinity: an ongoing water quality problem facing So. Calif!

- *Salinity has been a water quality problem for over 100 years in so. California*
- *Salinity will continue to be a water quality problem for the next 100 years.*

Thank you

Rich Atwater
Southern California Water Committee