

# History of Salinity Management in Southern California

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June 1, 2012

## 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 )

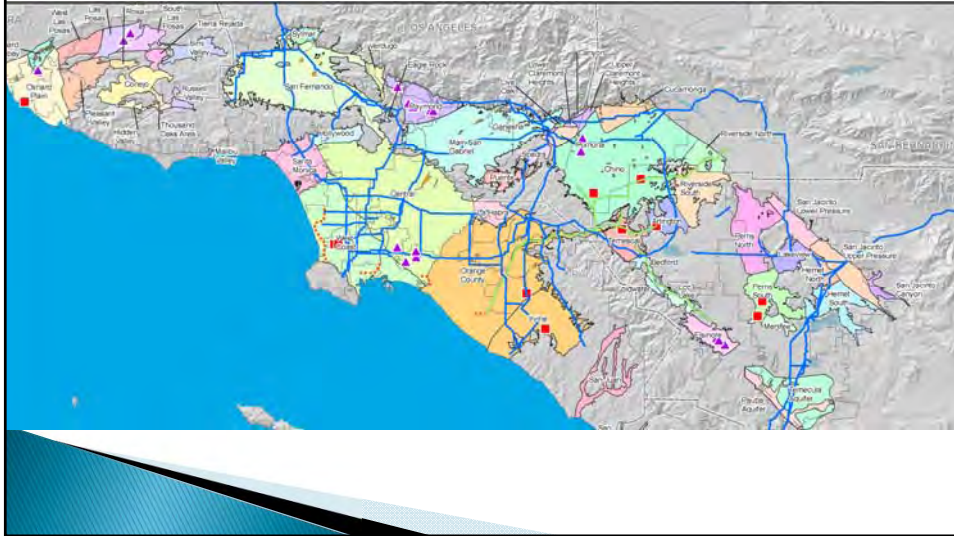
## Salinity Fundamentals:

- ▶ 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.

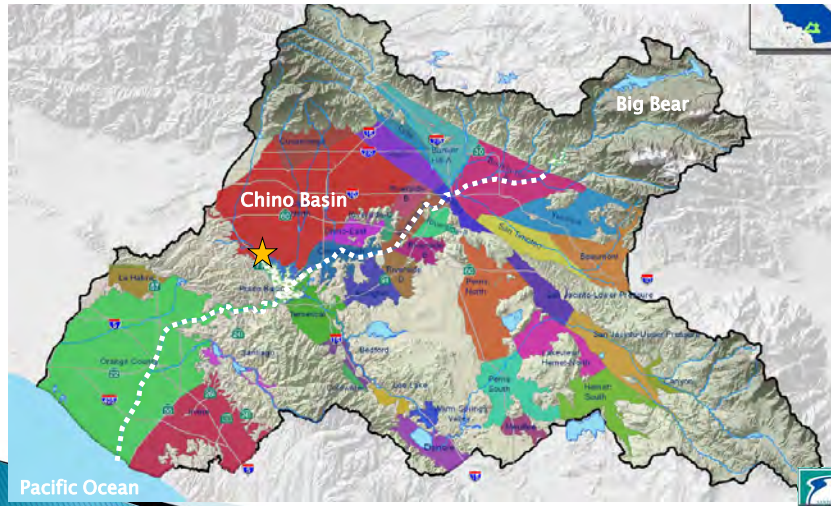
## 1999 Salt Balance: 600,000 tons/year



## Action Items:

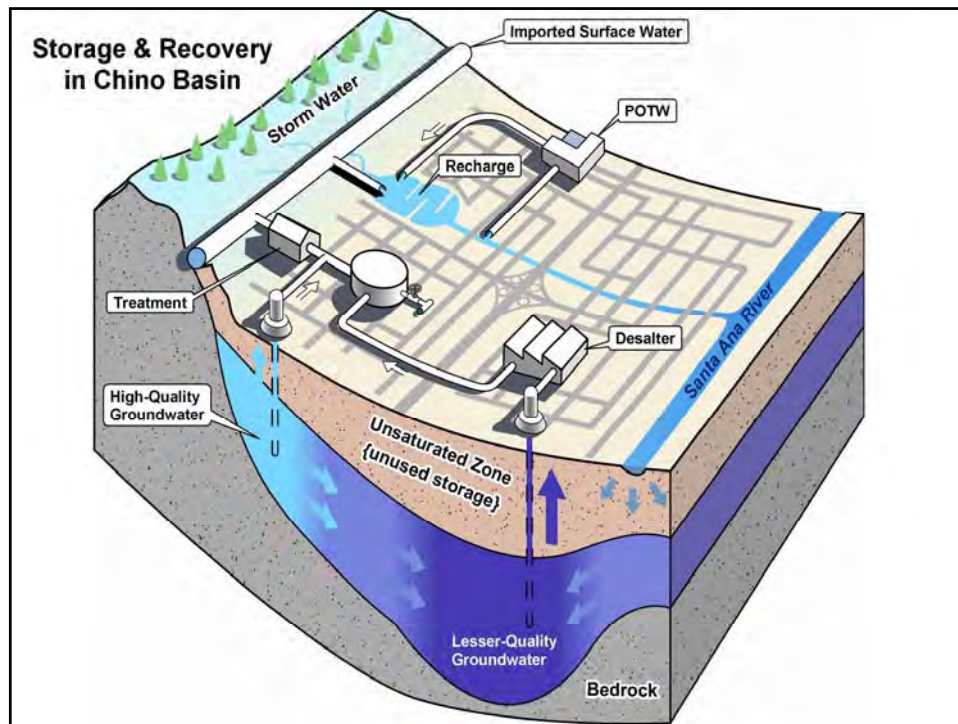
- ▶ Colorado River Salinity Control Program funding and other actions
- ▶ Blending target of 500/mg/L achieved
- ▶ State Water Project activities, BDCP could reduce TDS from 270 mg/L to 100 per mg/L
- ▶ Integrated water resources planning should focus on longterm salt balance
- ▶ Brine lines, gw desalters, water softeners and other source control strategies

## Santa Ana River Watershed



## Regional Salinity Management Efforts

1990s	Groundwater desalters
1997	500 mg/L blending strategy
1999	MWD adopts Salinity Management Action Plan
2000	Southern California Salinity Coalition formed
2001	Multi-State Salinity Council
2002-11	Funding and Control of Sources of Salinity ---- brine concentrate research, water softener ordinances and rebates, watershed management strategies (e.g., Calleguas Creek )



## Irrigation Salt Management Assistance

- ▶ Salinity Guide for Irrigation (NWRI and WaterReuse)
- ▶ 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*