CENTRAL VALLEY SALINITY COALITION

Salt Control Program

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Prioritization & Optimization Study

Collaborative 10-year salinity study

Geography	• Define salt sensitive hydrologic regions
Sources	• Identify salinity sources and impacts
Projects	• Identify, assess, and prioritize conceptual projects for long-term salt management
Management	• Identify non-physical projects and implementation plan
Governance	• Develop governance structure and funding plan
Funding	• Seek federal and state funds for implementation
Recommendations	• For Phase II of the Salt Control Program

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Prioritization & Optimization Study

Long-term strategies to achieve salt sustainability

ESTABLISH THE FOUNDATION

- Characterize Hydrologic Regions
  - Salt Conditions
  - Salt Loading
  - Salt Management Practices
  - Salt Sustainability Gap
- Develop Numeric Model Tool
- Salinity Target Development
- Special Studies

Planning areas defined by salt characteristics

IDENTIFY PLANNING AREAS

- Determine Appropriate Scale for Salt Management Planning
- Characterize Selected Planning Areas

ANALYZE ALTERNATIVES FOR PLANNING AREAS

- Identify and Evaluate Alternatives
- Select Preferred Alternative
- Prepare Salt Management Plans

SALT MANAGEMENT PLAN

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1. Planning Area
2. Existing/Planned Salt Management Projects
3. Non-Physical Projects
4. Physical Projects with Conceptual Designs
5. Estimated Costs
6. Phase 2 Implementation Schedule

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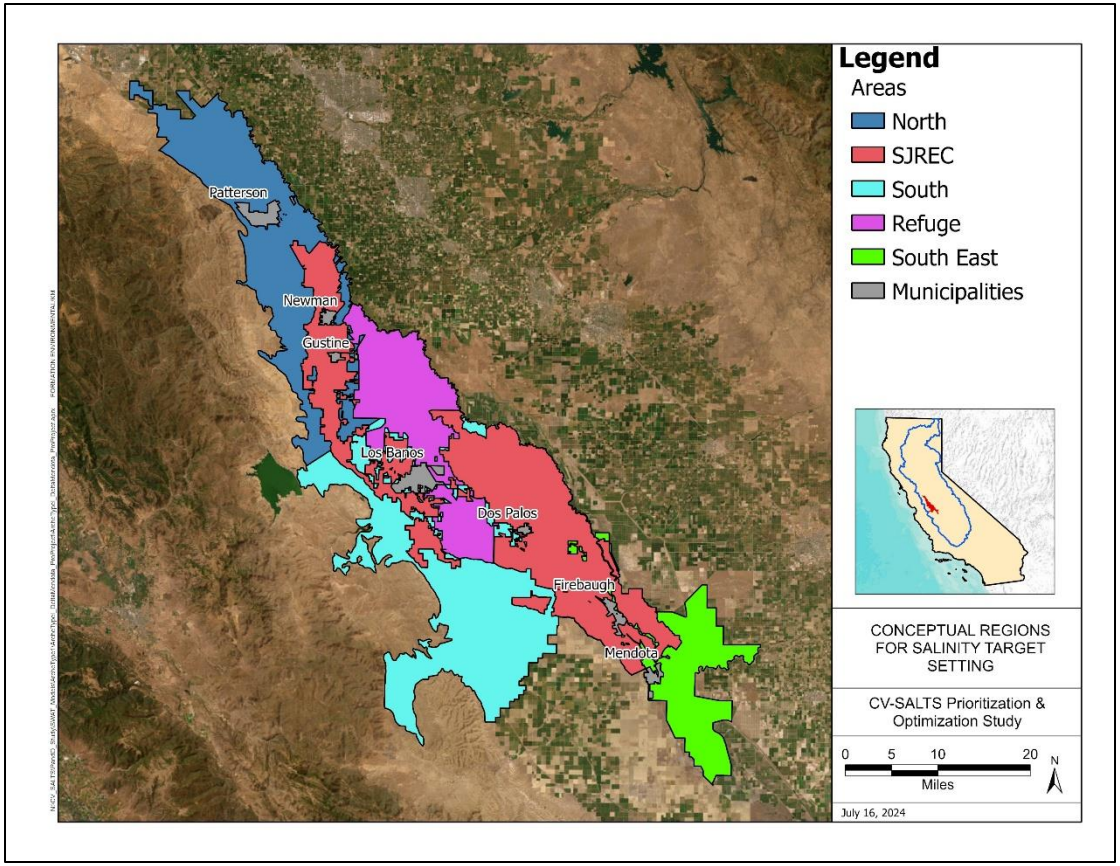
Salinity Target Setting – Delta Mendota Subbasin Archetype

- Stakeholders:
  - Water Districts - Del Puerto, Patterson, San Luis, Grassland
  - San Joaquin River Exchange Contractors
  - San Joaquin Valley Drainage Authority
  - Irrigated Lands Program
  - Cities of Patterson, Gustine, Newman

Salinity Target Setting — sub-area delineation



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Proposed modeling scenarios

- Purpose of Modeling Effort - to examine future salinity conditions
  - Identify salt accumulation problems impacting AGR and MUN uses
  - Use modeling tools to look 50, 100, or more years into the future
- Baseline Scenario
- Future Scenarios
  - Climate Change – select base case
    - Business as usual
    - SGMA futures – land use, recharge, permitting
    - Effect of Salt management measures

Rationale for sub-area map

Different usage of surface water and groundwater in Delta-Mendota study area

- **Municipal** – mainly dependent on groundwater
- **Northern Area** – mix of surface and groundwater
- **SJREC** – strong surface water rights, predominant use of surface water
- **Southwestern Area** – groundwater use limited by poor quality (high salinity) – dependent on surface water supplies – impacts cropping, land management, irrigation practices
- **Southeastern Area** – Groundwater is a key source for beneficial uses
- **Refuges** – Unique water management regime for managing wetland habitats

Crop Acreage in the Delta-Mendota Subbasin

2021 Crop Map				
Crop*	Mapped Acres	Percent of Area	Cum. Percent of Area	Crop Tolerance
Almonds	136,449	32.8	32.8	Sensitive
Pistachios	39,177	9.4	42.3	Mod. Sensitive
Corn, Sorghum or Sudan	37,407	9.0	51.3	Mod. Sensitive
Tomatoes (all)	34,998	8.4	59.7	Mod. Sensitive
Alfalfa and alfalfa mixtures	34,539	8.3	68.0	Mod. Sensitive
Cotton	33,817	8.1	76.1	Tolerant
Vineyards - No Subclass	11,553	2.8	78.9	Mod. Sensitive
Wheat	11,443	2.8	81.7	Mod. Tolerant
Melons, Squash, and Cucumbers	11,277	2.7	84.4	Mod. Sensitive
Grain and Hay - Misc.	10,369	2.5	86.9	Tolerant
Walnuts	10,000	2.4	89.3	Sensitive
Pasture - Mixed	8,370	2.0	91.3	Tolerant
Pasture - Miscellaneous Grasses	6,050	1.5	92.7	Tolerant
Young Perennial	4,997	1.2	93.9	Sens./Mod. Sens

- 415,650 acres
- 37.5% of acres are sensitive

2022 Crop Map				
Crop*	Mapped Acres	Percent of Area	Cum. Percent of Area	Crop Tolerance
Almonds	135,352	33.0	33.0	Sensitive
Cotton	44,355	10.8	43.8	Tolerant
Pistachios	39,958	9.8	53.6	Mod. Sensitive
Corn, Sorghum or Sudan	35,587	8.7	62.3	Mod. Sensitive
Tomatoes (all)	32,464	7.9	70.2	Mod. Sensitive
Alfalfa and alfalfa mixtures	29,175	7.1	77.3	Mod. Sensitive
Vineyards - No Subclass	10,717	2.6	79.9	Mod. Sensitive
Walnuts	9,573	2.3	82.3	Sensitive
Wheat	9,470	2.3	84.6	Mod. Tolerant
Young Perennial	9,426	2.3	86.9	Sens./Mod. Sens
Melons, Squash, and Cucumbers	9,340	2.3	89.2	Mod. Sensitive
Pasture - Mixed	7,866	1.9	91.1	Tolerant
Grain and Hay - Misc.	6,722	1.6	92.7	Tolerant
Pasture - Miscellaneous Grasses	6,192	1.5	94.2	Tolerant

- 409,900 acres
- 37.6% of acres are sensitive

**Excluding idle land*

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Preliminary AGR Protective target range

Basis for salinity range to protect AGR beneficial use

- Almonds identified as most salt sensitive crop

Range of Salinity Thresholds (30-day averages unless noted)

1350 µmhos/cm EC – 100 % yield (performance goal)

1550 µmhos/cm EC – 95% yield (WQO except in extended dry period)

2470 µmhos/cm EC – 75% yield (WQO in extended dry period)

2200 µmhos/cm EC – Short term MCL (annual average)

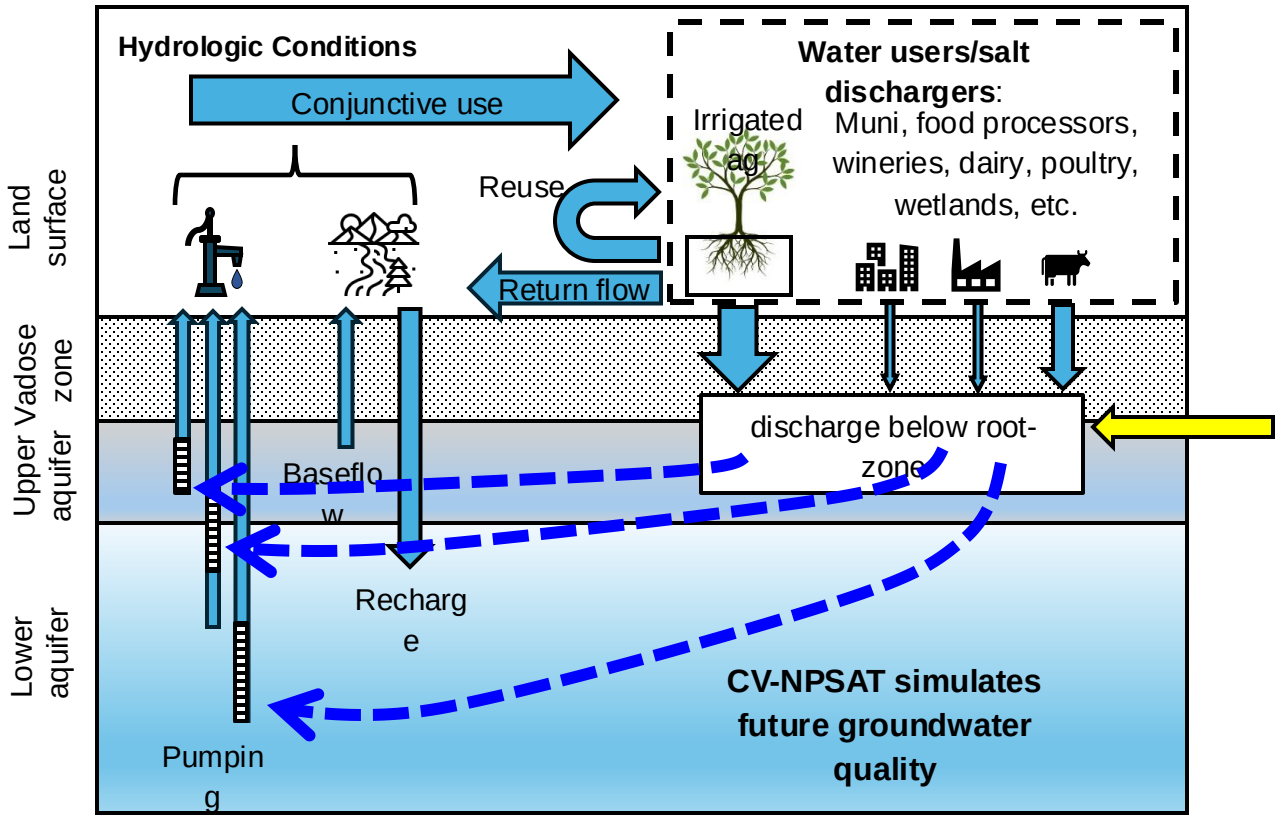
Municipal drinking water target range

- Secondary MCLs for Drinking Water (annual averages)
  - Acceptable Range: 900 to 1600 µmhos/cm EC
  - Allowable in Short Term: 2200 µmhos/cm EC

Preliminary target range - summary

- "Normal" years to protect AGR and MUN beneficial uses
  - 1350 to 1550 EC
- Drought/Extended Dry Periods
  - 1600 to 2200 EC

Model Linkage and Output



*NOTE: arrows represent combined water and salt transport

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For More Information

- CV-SALTS
  - Website and sign-up for email updates : cvsalts.info
  - Email: info@cvsalinity.org
- Regional Water Quality Control Board
  - cvsalts@waterboards.ca.gov