

WELCOME





CONSERVATION: STATE & REGIONAL PLANNING INTRODUCTIONS

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CONSERVATION: STATE & REGIONAL PLANNING STATE OVERVIEW, CLIMATE CHANGE

Jeanine Jones

INTERSTATE RESOURCES MANAGER, CALIFORNIA DEPARTMENT OF WATER RESOURCES







Jeanine Jones

Jeanine Jones is the Interstate Resources Manager for the California Department of Water Resources. She has more than 30 years of experience with DWR, including participating in interstate water negotiations, managing drought preparedness, and working on climate change adaptation programs. She also serves on the Western States Water Council and Colorado River Board of California. Jones is a registered professional engineer in California and Nevada, and has a B.S. and M.S. in civil engineering





Drought/Climate Change/Water Shortage

Jeanine Jones, California Department of Water Resources







Temporal Variability of Western Precipitation



Dettinger et al, 2011





Paleo Record, Largest CA Watersheds



Courtesy of Connie Woodhouse

Paleo Record, Local Supplies



Courtesy of University of Arizona

Annual California Runoff



California Average Temperature

January-December





Sacramento Valley, Climate Division 2



Climatic Water Deficit, USGS Basin Model



Slide courtesy of Lorrie Flint, USGS





Things Are Heating Up



These Aren't Our Grandparents' Droughts

2012-16 Drought

- Included warmest years on record, record low statewide snowpack
- State response actions not seen since 1976-77
- First-ever zero CVP ag contractor allocations
- About 500,000 acres fallowed
- First-ever state emergency response for areas of dry private residential wells

California's Most Recent Drought

- Zero allocation to most CVP ag contractors in WY 2021 and 2022, CVP M&I health & safety allocation in WY 2022, 5% SWP allocation
- Pending 2022 large-scale urban water use restrictions in Southern California due to infrastructure limitations
- First Lower Colorado River Basin shortage pursuant to the Interim Guidelines
- Record low Lake Oroville elevation in 2021, Hyatt PP unable to generate
- 70% statewide snowpack in WY 2021, yet runoff comparable to 2014-2015
- Groundwater impacts similar to San Joaquin Valley in 2012-16 now seen in parts of Sacramento Valley



Key Drought Challenges, California's Progress Since 2007-09 Drought

- Statewide coverage of groundwater level data in major aquifers
 - CASGEM legislation in 2009, SGMA legislation in 2014
- Small water systems 🖌
 - Multiple legislative provisions for mandatory system consolidation beginning in 2016, long-term resilience funding legislation in 2019 (\$130M annually for 10 years), drought response grants last 2 FYs
- Seasonal precipitation forecasting X
 - No improvement (requires action by NOAA)

Historical Skill of NOAA Seasonal Outlooks – Not Usable for Water Management

Seasonal (Lead 0.5 Months) Precipitation Heidke Skill Score DJF Manual Forecasts From 1995 to 2022



S2S Precipitation Forecasting Challenges

- Difficult science problem
- •Historically minimal federal research funding in comparison to weather and climate time scales
- Lack of interest by NOAA



Improving Subseasonal to Seasonal Precipitation Forecasting For Water Management

S2Sforecasting.org

California's Famine to Flood in WY2023



From the driest consecutive three years on record to one of the wettest

A Warmer/Dryer Climate

- Three California 21st century droughts: 2007-09, 2012-16, 2020-22
- Snowpack diminishing, projected increase in elevation of mountain snow lines of greater than 1000' by end of century
- Observed impacts in 2012-16 & 2020-22 droughts were unprecedented, show the fingerprints of climate change
- California is transitioning to a warmer & drier climate
- Extremes (wet and dry) expected to become more extreme, which is an incentive for maximizing groundwater storage in wet years





Questions?



CONSERVATION: STATE & REGIONAL PLANNING REGIONAL PLANNING & SGMA

Zoe Rodriguez del Rey

WATER RESOURCES MANAGER, COACHELLA VALLEY WATER DISTRICT





Zoe Rodriguez del Rey

Zoe has worked at Coachella Valley Water Districts for 7 years as Water Resources Manager. They represent CVWD on several regional water resource planning efforts. Including compliance with Sustainable Groundwater Management Act and Salt and Nutrient Management Plan, to ensure a sustainable and secure water future for the Coachella Valley. Zoe has been working in water for 18 years as a consultant to water utilities East of the Mississippi, as a source water programs coordinator for the City of Portland in Oregon, and research associate at the University of New Orleans. They have a Bachelor of Science in Biology and Master of Science in Environmental Sciences.



CV WATER COUNTS Regional Planning and SGMA

Zoe Rodriguez del Rey Water Resources Manager

February 6, 2024



Our Mission

To meet the water-related needs of the people through dedicated employees, providing high quality water at a reasonable cost.

About the Coachella Valley Water District (CVWD)

- Formed to protect and conserve local water resources.
- Special District established by state legislature in 1918.
- Governed by a 5-member Board of Directors.
- Service area is 1,000 square miles extending from the boundary of the City of Desert Hot Springs to the Salton Sea communities.



Water Related Services

- Domestic water
- Agricultural irrigation & drainage
- Groundwater replenishment & management
- State Water Project & Colorado River contractor
- Recycled water
- Stormwater protection & flood control
- Wastewater collection & treatment
- Water conservation advocacy & programs


Land Use and Climate



- Average precipitation is about 4 inches/year on valley floor.
- Summer temperatures. commonly exceed 100 °F and periodically reach 120°F.



Tribes of the Coachella Valley



Disadvantaged Communities

- 72.5% of the Coachella Valley is classified as Severely Disadvantaged Communities (SDAC).
- SDAC areas have annual median household income (MHI) less than 60% of Statewide MHI.



Balancing Demand, Supply, and Affordability



Water Demand and Supply

Water Year 2021-2022 Water Demand and Supply – Indio Subbasin Plan Area



Managed Aquifer Recharge 2007-2022

144,000 acre-feet per year



Sources of Water Supply

- Groundwater
- Colorado River
- State Water Project
 - Exchanged for Colorado River water
- Recycled water
- Local mountain runoff





Groundwater Replenishment Facilities (GRFs)

Whitewater River GRF



Thomas E. Levy GRF





Mission Creek GRF

Palm Desert GRF



Sustainable Groundwater Management Act

- Landmark 2014 legislation provides a framework for sustainable management of groundwater basins.
- Promotes local management
 - Groundwater Sustainability Agencies (GSAs).
 - Groundwater Sustainability Plan (GSP) or Alternative Plan.
- Sets regulatory deadlines for submitting plans, reporting progress, and achieving sustainability.

https://water.ca.gov/Programs/Groundwater-Management/SGMA-Groundwater-Management



Reduced Watershed Runoff

- Watershed runoff is a source of local recharge to aquifer.
- The last 25-years have been drier.
- Average watershed runoff ~25% lower.
- Permanent or cyclical?



State Water Project (SWP)

Water supply contracts set the maximum amount of SWP water a contractor may request annually (Table A amounts). But the amount of water available for delivery varies yearly, based on several factors, including:

- Hydrologic conditions
- Current reservoir storage
- Delivery requests from SWP contractors



Table A Deliveries

- 46% from 2007-2022
- 41% 10-year average



https://water.ca.gov/Programs/State-Water-Project

Colorado River

- Provides water to ~40M people and 4M acres of farmland.
- In drought since 2000.
- Colorado River Drought Contingency Plan (DCP) Authorization Act signed into law April 16, 2019.
- In June 2022, Commissioner Touton called on Basin States to take action to cut use by 2 to 4 MAF per year.

The Federal Government Announces Historic Water Cuts as the Colorado River Falls to New Lows



AUGUST 17, 2022





Developing Recycled Water Supplies

acre-feet per year

- Reliable source of local supply
- Drought-proof (mostly)
- Some challenges
 - Emerging contaminants (e.g., PFAS)
 - Wastewater change petitions
 - Relatively high capital and O&M costs



Planning for a Hotter and Drier Future

- Comprehensive update of the Indio Subbasin Water Management Plan.
- Modeled scenarios include increased growth and decreased supply reliability.
- Identifies projects and management actions to meet water needs and sustainably manage groundwater.
- Established metrics for groundwater sustainability.



Projected Growth and Water Use

 Coachella Valley population projected to <u>increase by up to</u> 50% by 2045.



Statewide Drought Declaration Response

- Statewide Drought Declaration on October 19, 2021.
- Implemented Water Shortage Contingency Plan.
- Increased efforts to promote conservation and efficiency
 - Since July 1, 2022, approved over \$16 million for conservation programs.
 - CVWD customers replaced ~5 million square feet of turf with water-efficient landscaping.
 - Developed partnerships with municipalities to increase funding for turf reduction.
 - Conducted public seminars, workshops & classes on water conservation.



"AB 1668 & SB 606: Making Conservation a California Way of Life"

The State Water Board will be adopting a regulation that establishes unique efficiency goals for each urban retail water supplier in California. The urban water use objective is the sum of standard-based budgets for a subset of water uses, including indoor and outdoor residential water budgets.



CVWD's Contributions to Colorado River

- 500+ Plan
 - 9,083 acre-feet (2022)
- USBR Component 1a -Compensated Conservation Program
 - 35,000 acre-feet per year (2023 2026)
- Potential DCP Contributions
 - 14,000 24,500 acre-feet per year based on Lake Mead elevation
- Negotiation of future water management and next set of guidelines for Colorado River are underway.

Posted on: November 9, 2022

CVWD takes action to reduce demand on Colorado River

Coachella Valley Water District (CVWD) Board of Directors took action to <u>execute an agreement</u> with the U.S. Bureau of Reclamation (USBR) to conserve Colorado River water by curtailing replenishment at its Thomas E. Levy Groundwater Replenishment Facility (Levy) for the remainder of 2022.

Understanding the need for action, the board also approved submittal of two proposals to USBR to participate in the Lower Colorado Conservation and Efficiency Program (LC



Conservation Program) for up to three calendar years (CY 2023 through 2025) with combined conservation up to 35,000 acre-feet per year (af/yr) between the two voluntary, temporary, and compensated programs listed below. Under the agreement, conserved water would be reimbursed at \$400 per acre-foot (af).

NEWS > ENVIRONMENT • News

SUBSCRIBER ONLY

Disaster averted on Colorado River — for now — thanks to wet winter and states' plan to conserve water, feds say

U.S. Bureau of Reclamation is pursuing states' conservation plan for next three years

SWP Delta Conveyance Project (DCP)

- DCP would modernize SWP infrastructure to restore and protect the reliability of SWP water deliveries.
- CVWD's Board of Directors authorized participation in the SWP DCP.
- Final EIR certified and DCP approved by DWR in December 2023.

https://water.ca.gov/Programs/State-Water-Project/Delta-Conveyance



Sites Reservoir Project: Water for Dry Years

2020

2021

2022

- 1.5 million acre-feet off-stream reservoir to capture storm-related winter runoff from uncontrolled streams below the existing reservoirs in the Sacramento Valley.
- CVWD's Board of Directors authorized participation at 10,000 acre-feet per year.
- Certified by Governor Newson in November 2023 with construction scheduled to begin in 2024 and final design in 2025.



https://sitesproject.org/

2025

Funding

2024

Documents

2023

Public Benefi

Contracts

2026

Approvals

2027

2028

2029

2030

Projects and Management Actions

Water Conservation	Source Substitution & Replenishment	Water Quality Protection
1: Urban Water Conservation	10: Mid-Valley Pipeline Direct Customers	22: Eliminate Wastewater Percolation
2: Golf Water Conservation	11: East Golf Expansion	23: Wellhead Treatment
3: Agricultural Water Conservation	12: Oasis Distribution System	24: Small Water System Consolidation
Water Supply Development	13: WRP-10 Recycled Water Delivery	25: Septic to Sewer Conversions
	14: WRP-10 Tertiary Expansion	26: CV-SNMP GW Monitoring Program
	15: Canal Water Pump Station Upgrade	27: CV-SNMP Development Workplan
	16: WRP-7 Recycled Water Delivery	28: Colorado River Salinity Forum
	17: WRP-4 Tertiary Expansion & Delivery	29: Source Water Protection
	18: DWA WRP Recycled Water Delivery	
	19: PD-GRF Phase 2 Expansion	
	20: TEL-GRF Expansion	

21: WWR-GRF Operation

Workplan

Step 1: Monitoring

> Step 2: Reporting

Step 3: Evaluating

Step 5: Implementing

> Step 4: Adjusting



"These results mark a reversal in trends of groundwater-level declines during the preceding decades. This trend reversal provides new insights into aquifer-system mechanics. Although many areas have stopped subsiding, and a few have even uplifted, the few areas that did subside during 2010–17—albeit at a slower rate—indicate a mixed aquifer-system response."

Michelle Sneed, USGS

Projected Demands and Supplies by 2045 Under Plan Scenarios

Expanded Agriculture Climate Change Cumulative Change in Storage

Simulated 2020-2070 Cumulative Change in Storage

Coachella Valley Salt and Nutrient Management Plan

The updated Coachella Valley Salt and Nutrient Management Plan (CV-SNMP) will result in a basin-wide plan to manage salts and nutrients in compliance with the Recycled Water Policy.

The goals of the plan update are to:

- Protect groundwater quality for future generations.
- Preserve the affordable use of water in the Coachella Valley for all beneficial users and uses.
- Engage the community in the development of a plan that manages salts and nutrients in a way that makes sense to the community.

Questions?

CONSERVATION: STATE & REGIONAL PLANNING LOCAL CONSERVATION EFFORTS AND INCENTIVES

Clark Elliott

CONSERVATION MANAGER, DESERT WATER AGENCY

Clark Elliott

Clark Elliott is the Conservation Manager with Desert Water Agency serving the western Coachella Valley. Clark has eight years of experience implementing water conservation regulations, running water use efficiency programs, and working with the public to meet water savings goals. Since joining Desert Water Agency, Clark has been involved in reporting to the state on the Annual Water Supply and Demand Assessment and managing day-to-day activities in a rebate program currently budgeted at \$4.4 million. Clark completed his Bachelor's in Earth System Science at the University of California, Irvine in 2014 and completed his Master's in Public Administration at California State University, Dominguez Hills this year.

Conservation in the Coachella Valley

February 6, 2024

Overview

- Background
- Current water restrictions
- New laws
- Collaborative efforts
- Water use in our valley
- What agencies do
- What can you do?

Background

May 9, 2016, Governor Brown Executive Order

"Making Conservation A California Way of Life"

- 1. Use Water More Wisely
- 2. Eliminate Water Waste
- 3. Strengthen Local Drought Resilience
- 4. Improve Agricultural Water Use Efficiency and Drought Planning

2018 Permanent Water Use Restrictions

- No irrigation during or within 48 hours after measurable rainfall.
- Broken sprinklers must be repaired within 24 hours of notification.
- Applying water to outdoor landscapes in a manner that causes runoff to adjacent property, roadways, parking lots, etc. is prohibited.
- Eating establishments may only serve drinking water upon request.
- Hotels and motels must provide guests with the option of choosing not to have towels and linens laundered daily.

2018 Permanent Water Use Restrictions

- Using a hose to wash an automobile, windows, solar panels, and tennis courts, except where the hose is equipped with a shut-off nozzle, is prohibited.
- Applying any water to any hard surface including, but not limited to, driveways, sidewalks, and asphalt is prohibited.
- Homeowners' associations or community service organizations cannot block, stifle, or threaten homeowners from reducing or eliminating the watering of vegetation or lawns during a declared drought emergency.

2018 Water Use Efficiency Legislation

- Drought Risk Assessment
- Water Shortage Contingency Plan
- Annual Water Supply and Demand assessment
- Agencies get a target/budget to meet
 - Budget includes:
 - Outdoor residential (flyover images)
 - Indoor residential (55 gpcd by 2023 > 47 gpcd in 2025 > 42 gpcd in 2030)
 - Commercial, industrial, institutional dedicated landscape meters
 - Water loss
 - Variance (seasonality)



2022 Executive Order

- All government agencies supplying water were asked to implement Level
 2 of their Water Shortage Contingency Plans in order to achieve a 15%
 reduction in water use compared to 2020.
- Some of the rules in the Coachella Valley include prohibitions on daytime watering, enhanced outreach, and discouraging overseeding.
- Commercial businesses and HOAs should not be watering solely decorative grass.



Collaborative Efforts

- Received Funding Under Prop 84, Prop 1 Grant for Regional Conservation
- Applied for more state funding for Regional Conservation Study
- Urban Water Management Plan (5 years)
 - Submitted July 2021, due July 2026
- Sustainable Groundwater Management Plans (5 years)
 - Submitted Jan 2022, due January 2027



Collaborative Efforts

- Outreach
 - Education
 - School Presentations
 - Tours

- Enforcement
 - Written Warnings
 - Citations
 - Fines
 - Surcharges/Penalties (during drought)

- Community Engagement
 - HOA Presentations
 - Tours (Virtual)
 - CV Water Counts Campaign (Splash)
 - Agency Mailers
 - Marketing/Advertising



Where is most of the water in the valley used?











Where does the supply come from?















What we do

Programs

- Water Counts Academy & CVWC
- Support code changes/improvements
- Customer communication/resources
- Advanced metering and/or use alerts
- Water use consults
- Water loss audits
- Water waste enforcement







What you can do



Indoor:

- Replace inefficient fixtures with efficient fixtures
 - Shower heads, faucets
 - Toilets
 - Washing machines
- Outdoor:



- Get to know your plants
- Periodically check your irrigation system
- Install a weather-based irrigation controller
- Use a shut off nozzle
- Replace grass with water efficient landscape
- See something, say something!



Incentives

- Grass removal
- Irrigation upgrade
- Smart controller install or rebates
- High-efficiency toilets
- High-efficiency washing machine
- Hot Water recirculation pump rebate
- Conservation kits





www.CVWaterCounts.com



Vater COUNTS

Lush & Efficient









Clark Elliott conservation@dwa.org 760-323-4971 ext 279



Questions?



Live Water Wise

It's easy. Convert your front or back yard to drought-friendly landscaping and save on average 230 gallons per day.

CVWaterCounts.com.







Thank you!

