Water COUNTS ACADEMY

# Desert Water Agency

- Founded in 1961 as a groundwater management agency
- Began providing water service to customers in Palm Springs and Cathedral City in 1968
- Imports water to recharge the groundwater basin
- 27 active wells and 25 reservoirs
- 2 hydroelectric plants that generate power
- 90 employees
- 24,000 domestic water connections serving a population of about 75,000 people over roughly 325 square miles
- 2,300 sewer accounts in Cathedral City







# WELCOME





# CONSERVATION: STATE & REGIONAL PLANNING INTRODUCTIONS

#### Nisha Ajmani Senior public affairs specialist, desert water agency







### Jeanine Jones

INTERSTATE RESOURCES MANAGER, CALIFORNIA DEPARTMENT OF WATER RESOURCES

Jeanine Jones is the Interstate Resources Manager for the California Department of Water Resources. She is a member and past Chair of the Western States Water Council, a Designee on the Colorado River Board of California, and a registered civil engineer in California and Nevada. She has more than 40 years of experience in water resources management.







#### Water Conditions & Climate Change

Jeanine Jones, California Department of Water Resources



NOAA Designal Olimpia Contana







#### Reservoir Storage % of Average - 01/26/2025



Groundwater Level Percentile - 01/26/2025



#### **Spring Statewide Groundwater Level Changes**

1-year change 4k 3.5k 3k 2.5k Well Cour 2k 1.5k 1k 500 0 Decrease > 25 Decrease 5-25 No Significant Increase 5-25 ft Increase > 25 ft Change Groundwater Level Change Category



10-year change



#### **Temporal Variability of Western Precipitation**







### Paleo Record, Largest CA Watersheds



Courtesy of Connie Woodhouse

### **Things Are Heating Up**



#### **These Aren't Our Grandparents' Droughts**



#### **Evaporative Demand Over Time**



### 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

## 2020-2022 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



### **California's Famine to Flood in WY2023**



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

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

Seasonal (Lead 0.5 Months) Precipitation Heidke Skill Score OND Manual Forecasts From 1995 to 2023



### **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

### **Catastrophic Wildfire Risk**

- All but 2 of the state's 20 largest & 20 most damaging fires have occurred from 2000 onward
- Increasing risk of damage to large-scale water infrastructure
- Destruction of urban water distribution systems: 2017 Tubbs Fire, 2018 Camp Fire, 2021 Dixie Fire
- Water quality degradation, boil water orders, debris flows





## **Catastrophic Wildfire Risk**

- 1991 Oakland Hills fire (25 lives lost)
- October November 2003 Southern California wildfires (22 lives lost)
- October 2007 Southern California wildfires (1 million people evacuated)
- 2017 Tubbs Fire, Napa/Sonoma (22 lives lost)
- 2018 Camp Fire, (85 lives lost)
- 2025 Eaton & Palisades Fires (28 lives lost)



FIRE NAME (CAUSE)	DATE	COUNTY	ACRES	STRUCTURES	DEATHS
1 CAMP (Powerlines)	November 2018	Butte	153,336	18,804	85
2 EATON (Under Investigation)*	January 2025	Los Angeles	14,021	9,418	17
<b>3 PALISADES</b> (Under Investigation)*	January 2025	Los Angeles	23,448	6,834	11
4 TUBBS (Electrical)	October 2017	Napa & Sonoma	36,807	5,636	22
5 TUNNEL - Oakland Hills (Rekindle)	October 1991	Alameda	1,600	2,900	25
6 CEDAR (Human Related)	October 2003	San Diego	273,246	2,820	15
7 NORTH COMPLEX (Lightning)	August, 2020	Butte, Plumas, & Yuba	318,935	2,352	15
8 VALLEY (Electrical)	September 2015	Lake, Napa & Sonoma	76,067	1,955	4
9 WITCH (Powerlines)	October 2007	San Diego	197,990	1,650	2
10 WOOLSEY (Electrical)	November 2018	Ventura	96,949	1,643	3
11 CARR (Human Related)	July 2018	Shasta County, Trinity	229,651	1,614	8
12 GLASS (Undetermined)	September 2020	Napa & Sonoma	67,484	1,520	0
13 LNU LIGHTNING COMPLEX (Lightning/Arson)	August 2020	Napa, Solano, Sonoma, Yolo, Lake, & Colusa	363,220	1,491	6
14 CZU LIGHTNING COMPLEX (Lightning)	August 2020	Santa Cruz, San Mateo	86,509	1,490	1
15 NUNS (Powerline)	October 2017	Sonoma	54,382	1,355	3
16 DIXIE (Powerline)	July 2021	Butte, Plumas, Lassen, & Tehama	963,309	1,311	1
17 THOMAS (Powerline)	December 2017	Ventura & Santa Barbara	281,893	1,063	2
18 CALDOR (Under Investigation)	September 2021	Alpine, Amador, & El Dorado	221,774	1,003	1
19 OLD (Human Related)	October 2003	San Bernardino	91,281	1,003	6
20 JONES (Undetermined)	October 1999	Shasta	26,200	954	1
"Structures" include homes, outbuildings (barns, garages, sheds, etc) and commercial properties destroyed.					

#### **Top 20 Most Destructive California Wildfires**

This list does not include fire jurisdiction. These are the Top 20 regardless of whether they were state, federal, local or tribal responsibility. \*Numbers not final \*DINS Disclaimer: These numbers are preliminary based on aerial assessments dedicating heat sources which can include chicken coops, outbuildings, sheds, water containers, etc. \*Validated inspections are currently being ground-verified by Damage Assessment Teams.



#### Multi-Hazards: Drought $\rightarrow$ Wildfire $\rightarrow$ Debris Flow



#### A Warmer/Dryer Climate

- Three California 21<sup>st</sup> 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
- Extreme wildfires increasing





## **Questions?**





# Live Water Wise

**It's easy.** Water your yard during nondaylight hours. More water will reach the roots, and less water will evaporate.

CVWaterCounts.com.

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#### Zoe Rodriguez del Rey WATER RESOURCES MANAGER, COACHELLA VALLEY WATER DISTRICT

Zoe has worked at Coachella Valley Water Districts for 8 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 19 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.


#### Coachella Valley Water Management February 4, 2025



#### Coachella Valley Water District

Zoe Rodriguez del Rey Water Resources Manager



www.cvwd.org

#### Outline





WATER DISTRICT

www.cvwd.org

Making every drop count since 1918

# A Brief History of Water Management in the Coachella Valley

- Water management has always been integral to the Coachella Valley
- Began delivering Colorado River water in 1949 for agricultural uses
- Began replenishing the groundwater basin with State Water Project Exchange water in 1973
- Adopted first Water Management Plan in 2002 to reliably meet current and future water demands in a costeffective and sustainable manner



#### Groundwater Management in an Arid Climate



40

#### Water Supply Portfolio and Uses



### Coachella Valley Groundwater Basin



#### **Groundwater Balance**



#### Change in Storage = Inflow – Outflow

- If Outflow is greater than Inflow over a long period, it results in overdraft
- Overdraft can lead to many undesirable results like depletion of storage, chronic lowering of groundwater levels, land subsidence, and water quality degradation
- Sustainable management requires balancing inflows and outflows over a reasonable period

#### Groundwater Balance by Water Year



## Groundwater Replenishment Facilities (GRFs)

Whitewater River GRF



Thomas E. Levy GRF





Mission Creek GRF



#### Palm Desert GRF



#### **Recycled Water**

- Three water reclamation plants (WRPs) currently recycle wastewater
- Two are operated by CVWD and one operated by DWA
- Used for golf irrigation and other landscape irrigation
- Plans to expand recycled water where feasible





acre-feet per year

#### Projected Growth by 2045

From development and expansion of sanitation service area

#### Potential Future Projects

#### Planned Projects

For golf, urban, and agricultural irrigation

#### Current Projects Provides for golf and urban

Provides for golf and ur irrigation

#### **Groundwater Sustainability**





### Sustainable Groundwater Management Act

#### Landmark legislation in 2014

- Provides a framework for sustainable management of groundwater basins
- Defined the Indio and Mission Creek Subbasins as medium priority
- Requires the Subbasins to be sustainably managed
- Sets regulatory deadlines for submitting plans, reporting progress, and achieving sustainable management



## Alternative to a Groundwater Sustainability Plan

- 2002 Coachella Valley Water Management Plan (CVWMP)
  - 2002 Plan to ensure adequate supplies were available to meet future demands
- 2010 CVWMP Update
  - Submitted to DWR as an Alternative Plan in 2016
  - Approved by DWR in 2019
- 2022 Indio Subbasin WMP Update
  - Submitted to DWR in 2021
  - Approved by DWR in 2024
- Next 5-year periodic evaluation due by January 1, 2027



### 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
- Identified projects and management actions to meet water needs and sustainably manage groundwater
- Established metrics for groundwater sustainability



### Plan Area

- Indio Subbasin
- Areas that currently or in the future are expected to rely on Indio Subbasin Groundwater







#### Forecasted Growth

- Based on Southern California Association of Governments (SCAG) socioeconomic growth forecasts released in 2020
- Population, employment, and other forecasted demographic changes inform water demand forecasts
- Approaches build-out of General Plan Updates

#### Forecasted Population Growth by 2045\*



\* Includes forecasted permanent and seasonal population growth

#### Water Demand Projections

- Based on forecasted growth, water use trends and projected land use changes (2022 Alternative Plan Update)
- Demand increase driven by urbanization
  - 8.4% increase mostly from municipal growth
  - Requires conversion from agriculture to urban land uses
- Incorporated increased efficiency of indoor/outdoor water uses for new developments and existing developments over time



#### Tracking Annual Water Use



#### **Projects & Management Actions**



#### **Groundwater Balance and Storage**



#### Adaptive Management



#### Adaptive Management



### **Sustainability Metrics**

- 2022 Plan Update identified 57 Key Wells to track groundwater sustainability (green circles)
- Each well has a minimum threshold (MT)
  - set at recent observed lowest elevation at each well around Water Year 2009/2010
- Current groundwater elevations are compared to the MTs and reported annually to DWR
- Levels in all wells reported above the MTs in Water Year 2023 Report



#### Questions?

#### To sign up for the SGMA Water Year 2024 Annual Report Workshop Visit http://www.indiosubbasinsgma.org/



COACHELLA VALLEY WATER DISTRICT www.cvwd.org

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EVERY DROP COUNTS!

Water

COUNTS

CVWaterCounts.com.







# **Clark Elliott**

#### CONSERVATION MANAGER, DESERT WATER AGENCY

Clark Elliott is the Conservation Manager with Desert Water Agency serving the western Coachella Valley. Clark has nine 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 at up to \$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 in 2023.



# Conservation in the Coachella Valley

Water Counts Academy February 4, 2025





## Overview

- Background
- Permanent Water Use Restrictions
- Nonfunctional Turf
- Making Conservation a California Way of Life
- Collaborative Efforts
- Water Use in our Valley
- What are Agencies Doing?
- What Can You Do?







#### Water COUNTS



**Recent Drought Periods:** 

- 2007-2009
- 2012-2016
- 2020-2022

In 2009:

• Water Conservation Act of 2009 (SB X7-7) (20% by 2020)



# Background

In 2014-2016:

- Governor Brown Drought Executive Orders
- Sustainable Groundwater Management Act
- Mandatory Water Restrictions
- Model Water Efficient Landscape Ordinance Update
- Water Loss Control Reporting

In 2018:

- Making Conservation a California Way of Life Legislation Passes (SB 606 & AB 1668)
- Water Shortage Contingency Planning
- Annual Water Supply and Demand Assessment
- Permanent Water Use Restrictions





In 2022:

• Governor Newsom Drought Executive Order

In 2023:

• AB 1572 banning "Nonfunctional Turf" for HOAs and Businesses

In 2024:

• Making Conservation a California Way of Life Regulation adopted by SWRCB







2024 was a "Surprisingly Average" Year

> From NASA Imagery

## On the Colorado...

- There is also a long-term drought on the Colorado River.
- All seven states bordering the river are working to find an amicable solution to reduced river flows.
- All of the Coachella Valley receives Colorado River water either directly or through exchange agreements.



Colorado River Basin USGS



## Permanent Water Use Restrictions

- No irrigation during or within 48 hours after measurable rainfall.
- Broken sprinklers must be repaired upon 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.
- 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.


#### Nonfunctional Turf

AB 1572- Ban on Nonfunctional Turf for HOAs and Businesses

- The legislation bans watering nonfunctional grass areas, areas not used for regular recreation or community events, with potable water
- This ban will go into effect:
  - Jan 1, 2027 For government properties
  - Jan 1, 2028 For commercial, industrial, and institutional properties (businesses)
  - Jan 1, 2029 For common areas of HOAs





erCOUNTS

#### Functional Turf Examples

















#### Nonfunctional Turf Examples













#### Making Conservation A California Way of Life

- Drought Risk Assessment
- Water Shortage Contingency Plan
- Annual Water Supply and Demand Assessment
- Water Loss Performance Standards
- Agriculture Water Management Plans



#### Making Conservation a California Way of Life

- Making Conservation a California Way of Life Regulation
  - Urban Water Use Objective Budget
    - 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)
  - Commercial, industrial, institutional performance measures



#### Making Conservation a California Way of Life

- How to reach the Urban Water Use Objective?
  - Alternative Compliance Pathways
  - Incentives/Rebates
  - Water Rates
  - Enhanced Water Waste Enforcement
  - Data Gathering
  - Public Outreach



#### **Collaborative Efforts**

- Apply for and receive Federal and State grant funding as a region
- 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 water most used in the Coachella Valley ?











### Where does the supply come from?

















#### What Are Agencies Doing?

#### **Programs**

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







#### Incentives/Rebates

- 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



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#### Lush & Efficient







#### What you can do



Indoor:

- Replace inefficient fixtures with efficient fixtures
  - Shower heads, faucets
  - $\circ$  Toilets
  - Washing machines
- Outdoor:
  - Get to know your plants



- $\circ\,$  Periodically check your irrigation system
- Install a weather-based irrigation controller
- Use a shut off nozzle
- $\circ\,$  Replace grass with water efficient landscape
- o See something, say something!





**Clark Elliott Conservation Manager** conservation@dwa.org

## 760-323-4971, ext. 279





#### **Questions?**





# Please watch for and complete our survey. Thank you!





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