

Meeting #2

Drought Resilience Interagency & Partners (DRIP) Collaborative

July 20, 2023

Sac State Downtown 304 S Street, Sacramento

Cindy Messer, Lead Deputy Director, DWR

DWR WELCOMING



Meeting Information

- > This meeting is being live streamed and is being recorded.
- Public participation: There will be an opportunity for public comment later in the meeting.
- > We look forward to an engaging, innovative, thoughtful, and respectful discussions.



Desired Meeting Outcomes

Outcome #1: Reaffirm the role of the DRIP Collaborative in meeting its purpose as stated in the legislation.

Outcome #2: Develop an integrated view of existing State and local efforts to promote drought resilience, thus establishing a baseline from which DRIP Collaborative can collaborate to drive improved outcomes.

Outcome #3: Develop a **collaboration road map** based on the topics of greatest interest to DRIP Collaborative members.



Meeting Agenda

10:00 AM - 12:40PM

- Welcoming Remarks and Setting Intentions
- Recap of DRIP Meeting 1 and Framework Moving Forward
- Hydrological Conditions Update
- The Drought Risk Management Framework
- State Agencies Drought Related Efforts
- Break
- Discussion: Coordination
 Opportunities
- Drought Strategies to
 Protect Communities and Species

12:40PM 1:30PMLunch

1:30 PM - 4:30PM

- The Arc of Engagement
- Discussion Part I: Developing a DRIP Collaborative Road Map
- Break and Self Reflection
- Discussion Part II: Developing a DRIP
 Collaborative Road Map
- Public Comment
- Next Steps and Closing



MEMBER INTRODUCTIONS





Share your **perspective** and **one key takeaway** from the first meeting that you are excited about.



Glen Low, Earth Genome

DRIP PURPOSE & FRAMEWORK FOR MOVING FORWARD



DRIP – Purpose

DRIP Collaborative desired outcomes

- ✓ Build trust
- ✓ Promote coordination and collaboration, via improved decision-making and clear resource allocation
- ✓ Improve drought messaging, communications, and education
- ✓ Think across multiple systems (groundwater/ surface water, sectors, federal/state/local, land use/water, climate/water)
- ✓ Build state and local capacity to address drought emergencies
- ✓ Protect those vulnerable (small systems, rural communities, tribes, environment)



DRIP – How we might work together?

- Outcomes focused. We should work on what matters most for resiliency; Be selective (while also capturing ideas to address all types of water users)
- Value add. Aim for big impact, efficient effort. Don't recreate the wheel, be additive
 to ongoing efforts and fill the gaps of the status quo
- Early wins. Identify opportunities for short-term success, keeping an eye on long-term resiliency
- Action plan. Create DRIP roadmap; Be concrete, solution oriented, and draw connections to actions and policy

It's up to you!



DRIP Organizational Structure



Network of state agency and other experts for presentations on topics





Ad hoc Work Groups may be requested by Task Force, as needed. No permanent Work Group structure.



Annual update on state drought program accomplishments, challenges, and recommendations to support proactive planning and response for drought



Agency Secretaries & Governor's Office





Spring Summer Fall



Jeanine Jones, Interstate Resources Manager, DWR

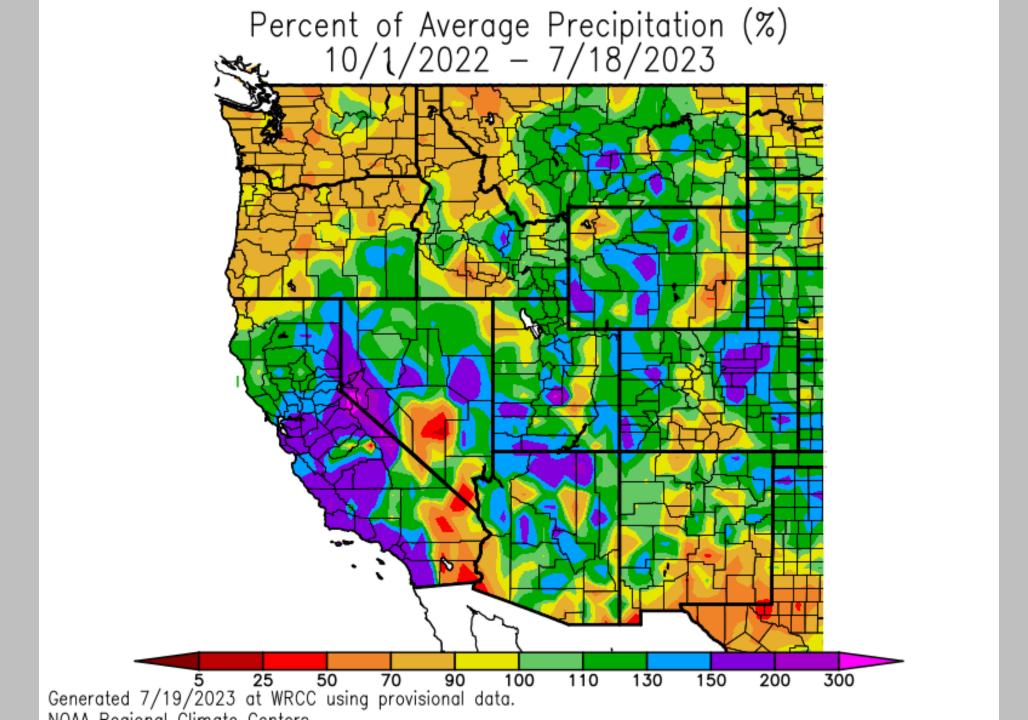
HYDROLOGICAL CONDITIONS UPDATE





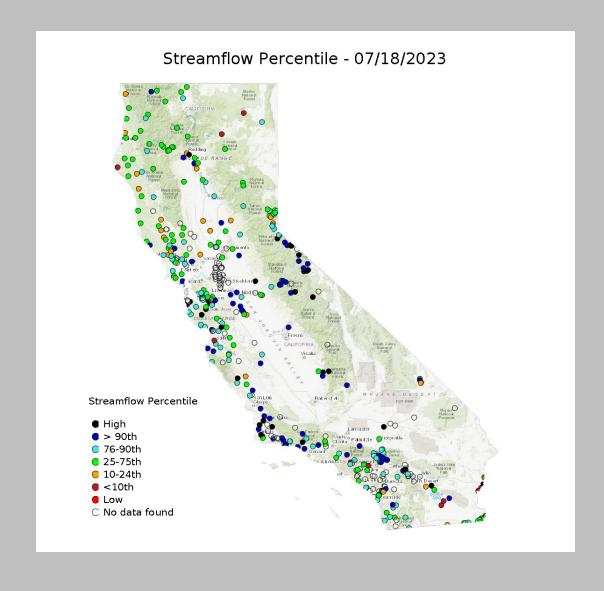
California Water Conditions

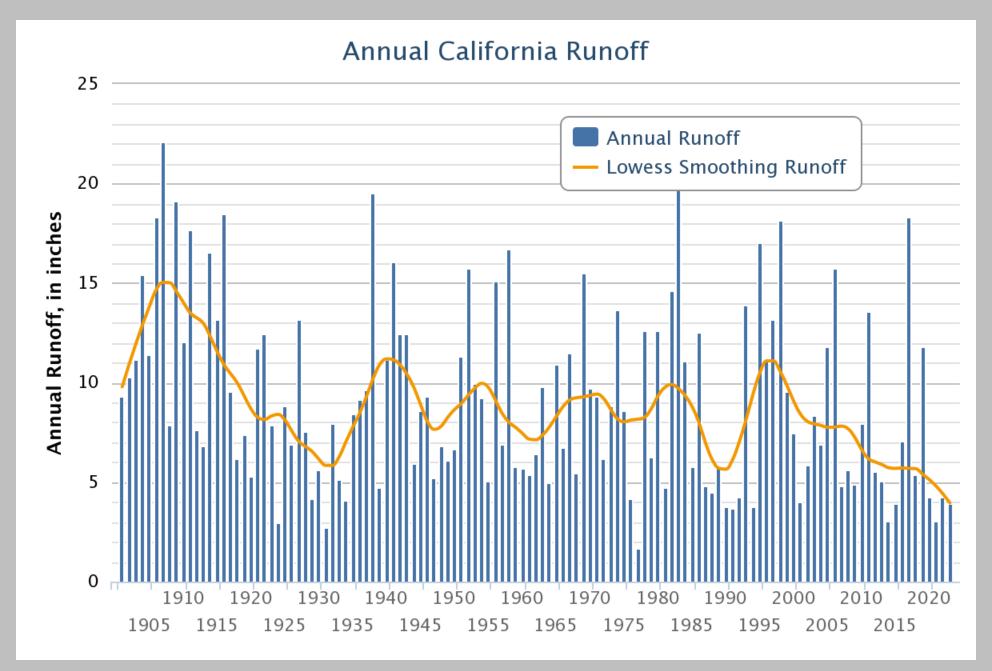
Jeanine Jones, California Department of Water Resources



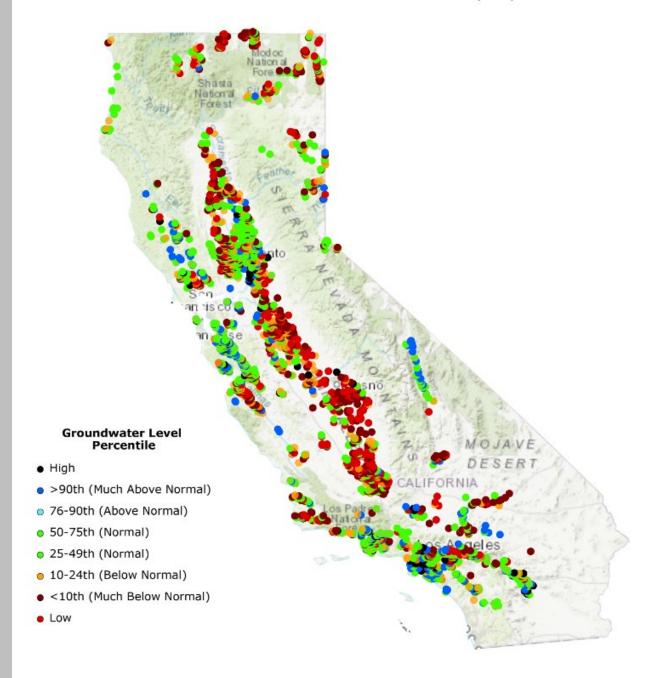
Current Conditions

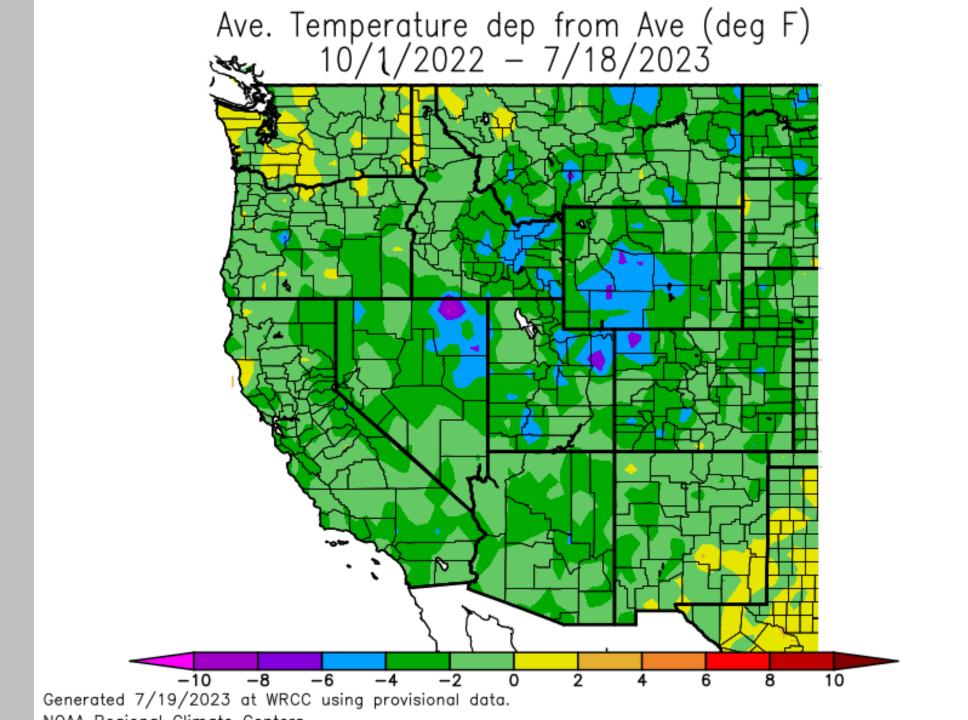
- Statewide precipitation: 138% of average for this date
- April 1st statewide snowpack was 237%: of historical average (sensor data)
- Statewide reservoir storage: 124% of average for this date





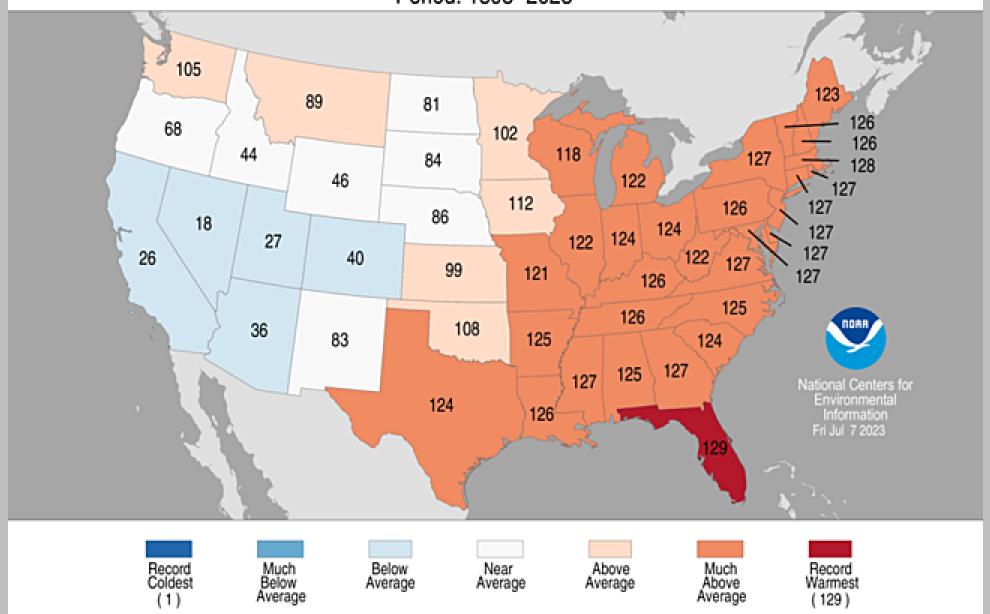
Groundwater Level Percentile - 07/16/2023





Statewide Average Temperature Ranks

January – June 2023 Period: 1895–2023



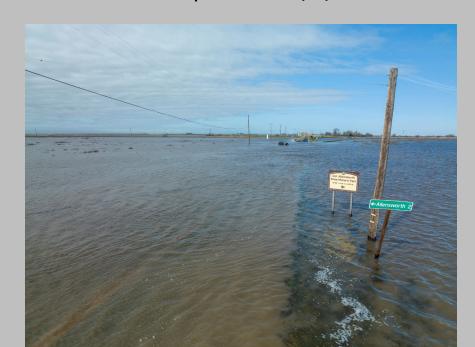
WY 2023 Key Point – Massive Southern Sierra Snowpack

Yosemite's Iconic Tioga Road Remains Closed, and It's Still Not Clear When It Might Open KQED 7/13/23

California flooding expands historic 'Ghost Lake' to almost same size as Lake Tahoe

USA Today 5/23/23

LADWP prepares for flooding in the Eastern Sierra Spectrum News 4/28/23

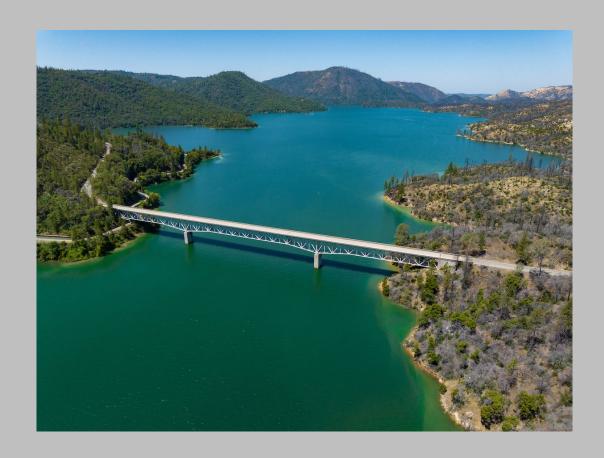




Water Project Allocations

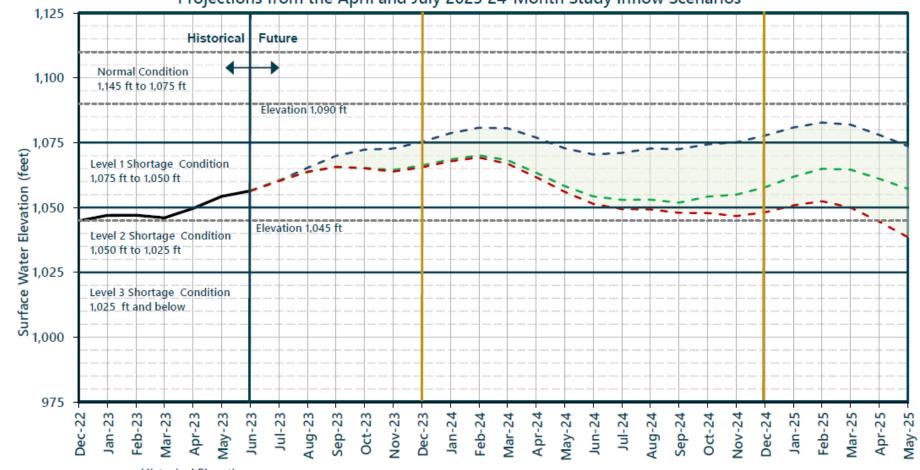
• SWP: 100% (Last 100% allocation was in 2006)

• CVP: 100% (M&I and Ag)



Lake Mead End of Month Elevations



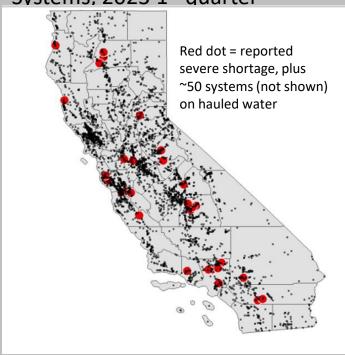


- Historical Elevations
- - April 2023 Maximum Probable Inflow with a Lake Powell release of 9.50 maf in WY 2023 and 9.00 maf in WY 2024
- - July 2023 Most Probable Inflow with a Lake Powell release of 9.04 maf in WY 2023 and 7.48 maf in WY 2024
- - July 2023 DROA Minimum Probable Inflow with a Lake Powell release of 9.09 maf in WY 2023 and 7.48 maf in WY 2024



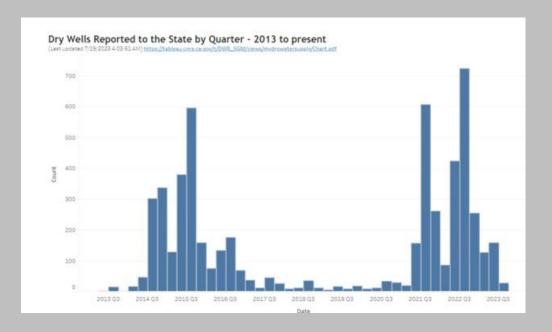
Small Water Systems & Private Wells

Small Community Water Systems, 2023 1st quarter



WATER BOARDS
State Water Resources Control Board

160 in Q2 of 2023, compared to 424 in Q2 of 2022



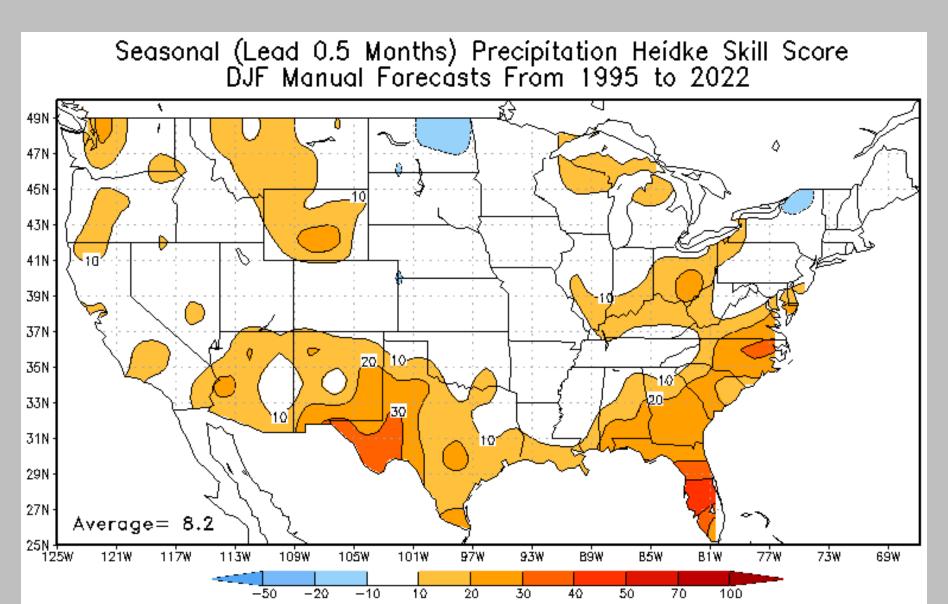
https://mydrywatersupply.water.ca.gov/report/publicpage

Oceanic Nino Index (ERSST.v5 ONI) 3mrm Nino 3.4 SST Anomalies (varying 30yr base period) <u>ල</u> Anoms SST 1960 2002 2008 2006 2016 2026 2030 2032 2014

El Niño Neutral La Niña

CA Division 2 October-March Precipitation (versus Southern Oscillation Index for prior year June-November) 60-Years: 1933/1934 - 2021/2022 October-March Precipitation (inches) $r^2 = 0.04$ 50-Correlation = -0.20Mean = 31.9940-Mean = 29.40Mean AII = 29.28Mean = 26.9130-20-10-June-November SOI (Tahiti minus Darwin) El Niño La Niña Neutral

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





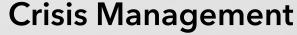
Julie Ekstrom, DWR

DROUGHT RISK MANAGEMENT FRAMEWORK



Drought Risk Management Cycle

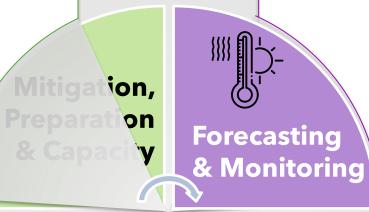






Drought Risk Management Cycle

- Risk Assessment
- Risk Reduction
- Improve coping capacity
- Improve emergency and shortage plans
- Build staff + resources (capacity)







Response



- Implement emergency response procedures
- Communication, call for assistance, etc.

- Impacts assessments
- Replenish water supplies
- Evaluation of response & future needs
- Assistance to suppliers and locals
- Funds to boundary organizations to distribute assistance



Domestic Well Drought Risk Management

- Assist counties develop SB 552 plans (grants, plan assistance, data)
- Support groundwater recharge
- Analysis of well permitting Executive Order to understand the long-term connection between well permitting, land use decisions, and the use of wells and groundwater resources.
- Support to GSAs for development and implementation of GSPs
- Continue and enhance the Be Well Prepared Campaign to empower well owners to be proactive about their well issues and have awareness/ greater education on their water well systems

- Monitoring and early warning systems for reservoirs (CDEC)
- Real-time data on precipitation and other relevant information publicly available through CA Water Watch
- Regular snowpack surveys to assess water content and accumulation levels
- Extensive CASGEM & SGMA monitoring network for groundwater levels

FORECAST

RESPONSE

- Dry Well reporting system for effective tracking of dry wells
- Funded experimental forecasting products
- Advocate for seasonal forecasting

- Continued support for well outages and drilling deeper wells with available funding (limited availability of funds by Spring 2023)
- Outreach and media presence to raise awareness that some wells are still dry; outages persist in certain homes and areas.
- Emphasis on groundwater recharge as a crucial strategy for replenishing aquifers during wet years
- Efforts to obtain permits, facilitate, and fund the diversion of flood waters to drought-stricken basins for recharge purposes.

- Provision of hauling services, tanks, and bottled water, funded through DWR with legislated directives (Small Community Drought Relief Program)
- Collaborative approach during the 2021-2022 drought, with agencies splitting responsibilities and resources across the state
- Close monitoring of needs, impacts, and conditions; coordination with Cal OES and Water Board through regular meetings
- Weekly meetings of secretaries and department heads to coordinate responses and interim solutions during worsening drought impacts

DWR – Anthony Navasero, Drought Coordinator, Executive Branch

Water Board – Andrew Altevogt, Assistant Deputy Director, Division of Drinking Water

CDFW – Brycen Swart, former Statewide Drought Coordinator

CDFA – Virginia Jameson, Deputy Secretary for Climate and Working Lands

CalOES – Nate Ortiz, Assistant Director of Planning and Preparedness

OPR – Saharnaz Mirzazad, Chief Deputy for Climate and Planning

CNRA-CalEPA – Nancy Vogel, Deputy Secretary for Water

STATE AGENCIES – DROUGHT-RELATED

EFFORTS



- Lessons learned what works that we can learn from, improve upon, and apply elsewhere?
- Where are the gaps that need attention?



Drought Coordination

Organizations and sectors. "Communicate across federal/state/local, academic, boundary organizations, and sectors to link large investments and bigger picture thinking about drought resilience."

- Tawny Mata, CDFA

Hydrologic cycle. "Find the right pace for this work, so we're not in a panic like in 2014 and we're not complacent in a year like this."

- Nancy Vogel, CNRA

Beneficiaries. "We need to identify strategies to achieve common goals. Common goals like reliable water supply for communities, protecting our environment, sustaining the economy."

- Katie Ruby, CUWA

Ongoing efforts. "An incredible amount of work is already underway, formalizing a lot of partnerships at the intersection of many water issues; lots of opportunities."

- Joaquin Esquivel, SWRCB



"There are many disparate drought puzzle pieces.

DRIP is a forum to put those puzzle pieces together."

- Anna Naimark, CalEPA



California Department of Water Resources

Anthony Navasero, Drought Coordinator, Executive Branch



Water Supply Shortage - Management Cycle

Mitigation & Preparation

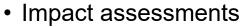
- Improved forecasting and modeling
- Improved monitoring and reservoir operation
- Increased funding to improve forecasting and modeling
- Increased funding to support mitigation of drought impacts





Forecasting & Monitoring

- Monitoring of conditions & impacts
- Forecasting and modeling
- Planning documents
- Risk communication



- Evaluation of response
- Replenish water supplies
- Resilience communication outreach





- Preserve and protect water supply
- Increase water supply coordination
- Coordination on potential Executive Order provisions
- Increase conservation messaging

Response



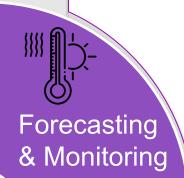




Groundwater Depletion - Management Cycle

- Airborne Electromagnetic Project
- Implement monitoring of subsidence and land-surface elevation changes
- Increased communication and education





Forecasting & Monitoring

- Forecasting, California
 Groundwater Update 2020 (Bulletin 118)
- Monitoring of conditions & impacts
- Monitor rates of subsidence, ground water usage, and irrigation use

- Multi-benefit recharge programs
- Expand Groundwater Recharge and Floodwater Management
- Technical Assistance for Temporary
 Water Rights for Ground Water Recharge

Recovery



- Temporary Flood Diversion Equipment and Recharge Enhancement
- Support the development of recharge basins





Water Board

Andrew Altevogt, Assistant Deputy Director, Division of Drinking Water



State Water Board – Drinking Water

Mitigation & Preparation

- Development of drought plan templates & requirement to submit (SB 200)
- Review of Electronic Annual Report and SAFER Clearinghouse Data
- Sanitary Surveys regulatory oversight
- Funding for resiliency projects

Forecasting & Monitoring

- Electronic Annual Report
- SAFER Clearinghouse Drought Reporting (SB 200 requirements)
- Machine Learning based predictive model
- Risk Assessment
- Aquifer Risk Map

- SAFER
- Funding for resiliency projects
- Consolidations and Administrators
- Drought Orders
- SAFER program for Failing and "at-risk" systems

- Emergency Response coordination District staff, LPA
- Emergency Funding 15 counties have Water Board funded programs
- Regulatory oversight Issuance of citations, orders

Recovery





State Water Board - Water Rights

Mitigation & Preparation

- Water supply demand analysis regulatory support
- · Development of communication channels and partnerships
- Engagement with partner agencies

Forecasting & Monitoring

- Database modernization UPWARD
- · Water unavailability visualizations
- Compliance with water measurement and reporting

- Issuance of groundwater recharge permits
- Track curtailment compliance
- Coordination with DFA and DDW

Issuance of Emergency Regulations

- Elevation of community needs
- · Enforcement of violation of curtailment orders
- Approval of temporary urgency change petitions
- Investigation of complaints

Recovery





State Water Board - Other Programs

Mitigation & Preparation

- Water use efficiency standards
- Conservation
- Water Board role in SGMA
- Flow objectives Regional Boards

Forecasting & Monitoring

- Water usage reporting urban water suppliers
- SWAMP
- GAMA
- SGMA modeling

Coordination between water board divisions and regions

- Reduction in water waste
- Emergency conservation
- Intra- and Inter-agency coordination (DWR, CalOES etc)

Recovery





California Department of Fish and Wildlife

Brycen Swart, former Statewide Drought Coordinator



CDFW Drought Related Efforts

Mitigation & Preparation

- Developed and received over \$300 million in FY 21 and 22 under Water Resilience and Drought Packages
 - Worked with DWR, SWRCB, DFA, CNRA to develop budget packages
 - Utilized lessons learned from last 2012-2016 drought
 - Hired 80 new LT positions
- Established internal Drought Response Team

- · Many species are still suffering the effects of drought
- Recovery will take a while and requires sustained effort
- What more needs to be done?
- Continued collaboration with agency partners and stakeholders
- · Long-term drought funding
- Secured water for the environment
- Additional habitat restoration and connectivity

Recovery

Forecasting & Monitoring

- Utilized existing long-term aquatic and terrestrial species monitoring programs
 - Increased stressor monitoring on vulnerable species and areas
- Fish health and disease monitoring and treatment (e.g. *C.Shasta* and Thiamine deficiency)
- Real-time water operations and decision-making w/DWR
 - CVP/SWP Temporary Urgency Change Petition
- Provided regular updates to the SWRCB
 - Technical guidance on variance requests, curtailments, etc.

- Fisheries and Hatcheries
 - Conducted 91 rescues in 52 waters; 29,089 fish, 22 species
 - Reintroduction of winter-run Chinook into McCloud River
 - Increased juvenile Central Valley Chinook salmon production by ~6 million fish
 - Trucked 36.5 million CV juvenile Chinook salmon to bays for release
 - \$16M on hatchery infrastructure improvements and equipment upgrades
- Wildlife and Lands
 - Translocations and captive rearing of amphibians, reptiles, etc.
 - · Guzzler refill for Bighorn Sheep and other wildlife
 - · Increased injured care and human/wildlife conflict response
 - \$24M on water conveyance and habitat projects on state lands (1 million acres)
- \$150M on fish passage, flow enhancement, and habitat improvement projects w/ agency partners and stakeholders

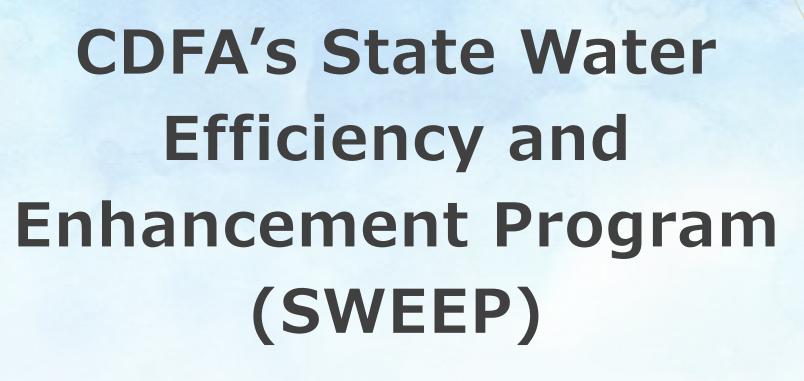
 Response



California Department of Food and Agriculture

Virginia Jameson, Deputy Secretary for Climate and Working Lands





DRIP Collaborative

Mitigation and Preparation

SWEEP Overview

CDFA's Authority comes from Environmental Farming Act of 1995:

"The department shall establish and oversee an environmental farming program. The program shall provide incentives to farmers whose practices promote the well-being of ecosystems, air quality, and wildlife and their habitat"

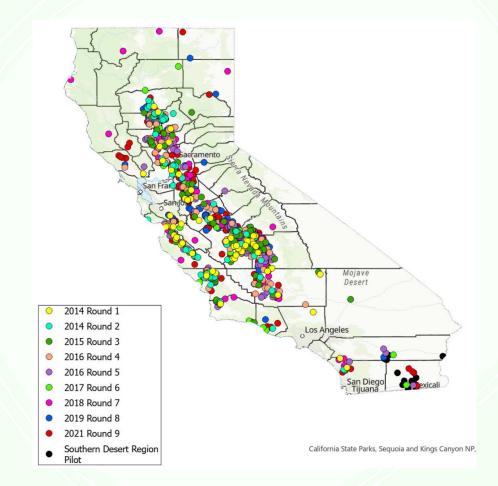
Emergency Drought Legislation Bill - SB 103 signed by Governor Brown in 2014

- Provided SWEEP with \$10 million "to invest in irrigation and water pumping systems that reduce water use, energy use and GHG emissions."

Since 2014, SWEEP has awarded \$123.5 million in funding with over \$50 million in matching funds.

- Funded 10 different rounds of projects totaling over 1,100 individual projects
- 170,000 acres have been impacted by the program, about 4 times the size of Washington DC

CDFA has two more rounds, totaling \$70m, in the works. One of the coming rounds is a block grant and the other round is a direct to farmer grant.



Project Types

Irrigation Conservation & Sensors

• Sensors for Irrigation Scheduling (weather, soil or plant based)

• Micro-Irrigation or Drip Systems

<u>AND</u>

GHG Reductions

- Fuel Conversion
- Improved Energy Efficiency
- Low Pressure Systems
- Variable Frequency Drives
- Reduced Pumping



Technical Assistance & The Block Grant Pilot Program

Technical Assistance: CDFA is developing regional expertise to strengthen regional climate smart ag goals.

TA Requirements

- Provides one on one application assistance (help with QM, gathering quotes, technical questions)
- Uses 5% of the total allocation for the programs, as required by Ab 2377
- Fund 75 organizations with \$3M total, includes SWEEP, HSP, and AMMP
- TA are required to prioritize SDFR, ongoing implementation support, translation

The Block Grant Pilot Program

CDFA aims to support regional capacity building and provide opportunities for regional strategic use of SWEEP funding through regional block grant administrations.

- Funding up to \$40 million, up to \$5 million per entity
- BGR will provide both adminstrative and technical support to their growers and at least 80% of the funds are for on farm projects



Projected Water and GHG savings that result from SWEEP

Savings Estimation Tools

- 1. Irrigation Water Savings Assessment Tool (USDA:NRCS)
- 2. GHG Calculator (Developed by ARB with CDFA)

Projected water savings by all projects per year: 150,000 ac/ft

Approx. 15% storage capacity of Folsom lake

Projected GHG savings by all projects per year: 93,000 MTCO2e

• Equivalent to the sequestration of approx. 2.1 million tree seedlings grown over 10 years

We have conducted post project outcome reporting and seen similar results as what was anticipated in the projected post project outcome. (Limited study)



Questions?

SWEEP Email: Scott.weeks@cdfa.ca.gov



California Office of Emergency Services

Nate Ortiz, Assistant Director of Planning and Preparedness





California Governor's Office of Emergency Services (Cal OES)

Cal OES

- California's Emergency Management Department
- All hazard planning, mitigation, response, and recovery capability
- Ability to mission task other state partners
- Connected to all 58 Operational Areas (counties)
- 24/7 California State Warning Center and response capability
- We work with FEMA for federal support during disasters.

OPERATIONAL AREA CONCEPT

"BOTTOM-UP APPROACH"

State

Statewide resource coordination & integrated with federal agencies

Regional

Coordinates among operational areas

Operational Area

Coordinates all local governments within a county

Local

County, city or special district

Field

On-scene responders



California Governor's Office of Emergency Services - Cal OES

Mitigation & Preparation

- Cal OES participates on the Cal EPA led Drought Response Briefings.
- Cal OES coordinates with local jurisdictions via Cal OES
 Operations, sharing DWR and SWRQB mitigation and preparation programs and information, as well as FEMA Hazard Mitigation program information.
- Updated Emergency Drinking Water Procurement & Distribution Planning Guidance
- Begun development of a climate change and emergency management course

Forecasting & Monitoring

- Cal OES maintains situational awareness of local jurisdiction drought status via Cal OES Regional Operations.
- Cal OES Maintains state level situational awareness from participation on the Cal EPA led Drought Response Briefing.
- Regular participation in CalEPA coordination meetings
- Winter Storms Advance Planning unit considered the broader context including drought

- Monitor and analyze drought emergency proclamations; to include requests for State, Federal and CDAA assistance.
- Coordinate with local jurisdictions on identifying drought emergency impacts
- Tracking local jurisdiction requests for state assistance and associated costs related directly to drought impacts
- Evaluate local need for assistance and draft recommendations based on guidance from active executive orders and state of emergency
- **Recovery**

- Developed a Drought Dashboard for tracking mission tasks
- Cal OES coordinated with the DWR, the SWRCB, and other agencies on advance planning effort addressing statewide water issues.
- Cal OES Logistics coordinated with the DGS, DWR, and SWRCB to anticipate surge needs for emergency water procurement/delivery.
- Provided support and coordination to state lead drought response agencies. (ability to mission task state agencies)





Governor's Office of Planning and Research Saharnaz Mirzazad, Chief Deputy for Climate and Planning





Governor's Office of Planning and Research

Saharnaz Mirzazad

Chief Deputy for Climate and Planning

OPR's Integrated Climate Adaptation and Resiliency Program advances a *climate-resilient California for all*



(Senate Bill 246)

The Integrated Climate Adaptation and Resiliency Program (ICARP) coordinates and aligns California's response to climate impacts, prioritizing equitable approaches that integrate mitigation and adaptation through four main workstreams:

Policy & Programmatic Alignment

- Technical Advisory Council
- California Climate Adaptation Strategy
- Long-term disaster recovery and resilience

Climate Services

- Technical assistance
- Decision-support tools

Cal-Adapt

Vulnerable Communities Platform

Adaptation Clearinghouse

Actionable Climate Science

- State-funded climate science research, data, tools and initiatives
- California Climate Change Assessment



Direct Investments

- Adaptation Planning Grants Program
- Regional Resilience Grants Program
- Extreme Heat Grants Program
- Cooperative Technical Partners

California Governor's Office of Planning and Research

Mitigation & Preparation

- Providing decision support tools, climate services, and guidance **documents** aimed at helping local planners and diverse communities address climate change, land use, and housing issues.
 - Adaptation clearinghouse
 - Adaptation Planning Guide
 - General Planning Guidelines
- Providing Technical Assistance to communities in need:
 - Cooperative Technical Partners (CTP) Program

Adaptation **Planning**



Forecasting & Monitoring

- Presenting California with the best available science to inform policy, planning and action on climate change
 - California's Fifth Climate Change Assessment uses the best available science to project the impacts and risks of climate change in California at statewide and regional scales.
 - Projections and scenarios data, analytics and visualizations in Cal-Adapt.
 - The Vulnerable Communities Platform

- **Ensuring Communication, Partnership, and Education** set a foundation for community-led policy
 - Save Our Water Campaign to make water conservation a year-around effort.
 - Integrated Climate Adaptation and Resiliency Program (ICARP)

Technical Assistance, Communication & Education

Funding **Programs that** support local action

Research,

Analytics

Data &

Investing in communities to build resilience

- SGC Community Resilience Centers Grant Program
- SGC Regional Climate **Collaboratives Grant Program**
- · SGC Affordable Housing and Sustainable Communities **Grant Program**
- SGC Transformative Climate **Communities Grant Program**
- SGC Community Resilience Centers

- ICARP Adaptation Planning **Grants Program**
- ICARP Regional Resilience **Grant Program**
- ICARP Extreme Heat Grant Program
- OPR Regional Early Action Planning Grant Program
- OPR Federal Grant Program









California Natural Resources Agency - CalEPA

Nancy Vogel, Deputy Secretary for Water



California Environmental Protection Agency and Natural Resources Agency Role in Managing Drought



Drought Resilience Interagency and Partners (DRIP)
Collaborative

July 20, 2023

- Anna Naimark, Deputy Secretary and Special Counsel for Water, CalEPA
- Nancy Vogel, Deputy Secretary for Water, CNRA



Our Missions

 CalEPA: To restore, protect and enhance the environment, to ensure public health, environmental quality and economic vitality. CNRA: To restore, protect and manage the state's natural, historical and cultural resources for current and future generations using creative approaches and solutions based on science, collaboration, and respect for all the communities and interests involved

Who We Are

CalEPA

- California Air Resources
 Board
- Department of Pesticide Regulation
- CalRecycle
- Department of Toxic
 Substances Control
- Office of Environmental Health Hazard Assessment
- State Water Resources
 Control Board

CNRA

26 departments, conservancies, and commissions including:

- CAL FIRE
- Department of Fish and Wildlife
- State Parks
- California Conservation Corps
- Energy Commission
- Delta Stewardship Council
- Water Commission
- Department of Water Resources

Agency role in state government

Agencies work directly together and with

Governor's office

Agencies provide oversight and support for

- Policy
- Budget
- Human resources
- Legislative affairs
- Tribal affairs
- Equity
- Communications
- Legal affairs



CNRA and CalEPA—Oversight and Support of Departments, Boards, Commissions

Mitigation & Preparation

- Policy
- Budget
- Human resources
- · Legislative affairs
- Tribal affairs
- Equity
- Communications
- Legal affairs
- Interagency coordination
- Governor's office interaction

- Policy
- Budget
- Human resources
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- Tribal affairs
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- · Interagency coordination
- Governor's office interaction

Recovery

Forecasting & Monitoring

- Policy
- Budget
- Human resources
- Legislative affairs
- Tribal affairs
- Equity
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- Interagency coordination
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- Policy
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- Legal affairs
- Interagency coordination
- Governor's office interaction







Examples of Agency Engagement

ENVIRONMENTAL PROTECTION

ENVIRONMENTAL PROTECTION

The California Environmental Protection Agency's (Cal EPA) programs promote the state's economy in a sustainable manner by reducing greenhouse gas emissions, enhancing environmental quality, and protecting public health. The Secretary coordinates the state's regulatory programs and provides fair and consistent enforcement of environmental law.

The May Revision includes \$5.1 billion (\$339 million General Fund, \$4.8 billion special funds, and \$12 million bond funds) for programs included in this Agency. Climate resilience efforts are discussed in the Climate Change Chapter.

GROUNDWATER SUSTAINABILITY

Groundwater is one of California's most important natural resources. Groundwater accounts for 41 percent of California's total water supply on an average annual basis—but as much as 60 percent in critically dry years. Approximately 80 percent of Californians rely on groundwater for some portion of their household needs, including for drinking water. Some communities, often those that are small, rund, and disadvantaged, can be dependent exclusively on groundwater. Groundwater also replenishes streams, creeks, rivers, and wetlands that support wildlife, and is an important resource for crop irrigation.

Groundwater overdraft has been occurring in many of California's groundwater basins for decades, causing damaged infrastructure and dried-out wells. Overdraft also has

MAY REVISION — 2023-24

California Awards \$10 Million to Help Small Communities Prepare for Long-Term Dry Conditions

ublished: Jun 14, 2023



SACRAMENTO, Calif. – Continuing California's work to support small communities through extreme climate shifts, the Department of Water Resources (DWR) announced its tenth round of funding through the Small Community Drought Relief Program.

In coordination with the State Water Resources Control Board, the program identified 11 projects to benefit underserved communities in Fresno, Lake, Marin, Shasta, Siskiyou, Tehama, Tulare and Tuolumne counties, including one Tribe. The selected projects will implement solutions such as pipeline replacement, well rehabilitation and infrastructure upgrades.

"Climate change is bringing more frequent and more intense drought conditions that create unique and serious challenges for California's small communities," said DWR Deputy Director of Integrated Watershed Management Kristopher Tjernell. "Today's funding is part of DWR's larger effort to support water supply reliability statewide, especially for our most vulnerable populations."

The following communities will receive funding:

- In Fresno County, the city of Parlier is struggling to meet daily water demand because of a failing well. To help meet demand, the city will receive \$765,000 to rehabilitate an existing well.
- Waterworks District 40, serving the Shaver Springs community, will receive \$1.2 million to drill a new well and treat
 contaminated water from an existing well. Both projects will benefit the community by improving water supply reliability
 and water could be.
- In Lake County, the Habematolel Pomo of Upper Lake Rancheria's existing well is compromised due to the state's recent
 drought. The Tribe will receive \$100,000 to cover the costs of constructing a new water well to provide water to residents.
- In Marin County, the Inverness Public Utilities District is struggling to meet demand due to three leaking redwood tanks
 and a falling steel tank that is currently losing more than 3 million gallons of treated water annually due to the leaks. The
 district will receive \$1.2 million to replace the tanks and secure the community's water sunnly.
- In Shasta County, County Service Area No. 3 at Castella will receive \$1.6 million to replace the existing water intake system and rehabilitate a water storage tank to ensure resiliency in the coming summer months.
- In Siskiyou County,the community of Tulelake is struggling due to low groundwater levels as a result of the recent
 multiyear drought. The city will receive \$700,000 to rehabilitate two wells, provide bottled water and install an
 emergency notable water filling station.
- In Tehama County, the city of Corning will receive \$2 million to construct a new well and pipeline to help serve
 approximately 25 homes that currently rely on domestic wells that are going dry. Tehama County Environmental Health



California Governor eases drought restrictions

Governor Gavin Newsom has rolled back some drought emergency provisions that are no longer needed due to current water conditions, while maintaining other measures that support regions and communities still facing water supply challenges, and that continue building up long-term water resilience.



An image taken on March 24, 2023, showing Governor Gavin Newsom signs an executive order related to drought on March 24, 2023.

Learn more

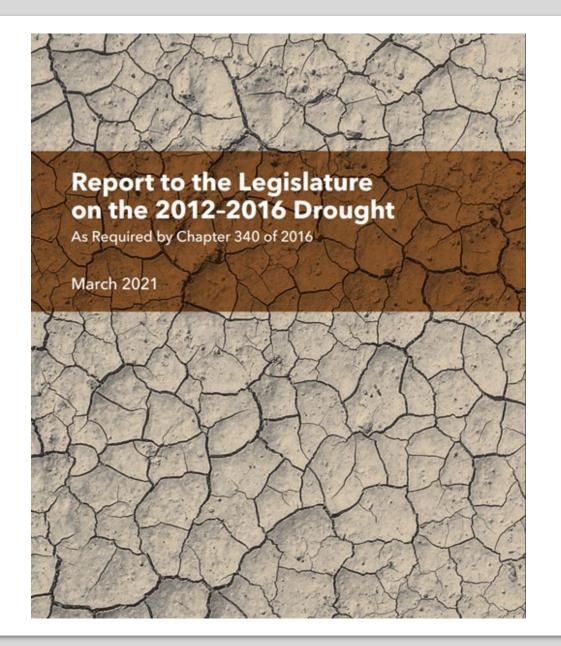
Take action

Save water in your home

Get drought assistance

Read this week's update

43



Message from the Secretary

California's last severe drought tested all aspects of how we manage water. Five consecutive dry years from 2012 to 2016 took their toll on many communities, our agricultural economy, and our state's remarkable natural environment.

Individual Californians and our leaders rose to the challenge. Across the state, communities reduced their water usage by an average of 25 percent. State agencies triaged emergency assistance to rural communities where wells ran dry. Governor Brown and legislators secured \$7 billion in water resilience investments and together enacted landmark water management laws. Several years later, we continue to work with regions to advance a generation-long endeavor to sustain groundwater aquiflers, to diversify water supplies, and to restore river health.

While Californians can take pride in this response, we must strengthen our drought preparation and response moving forward. In 2016, the Legislature wisely directed our agency to assess State government actions during the recent drought and suggest ways to better endure future dry years. This report provides that assessment, establishing a detailed record of actions taken and highlighting where we need to build our resilience. As we navigate a global pandemic and the return of dry conditions, this report is timely and helpful. The availability of water is central to our work to protect residents, combat inequity, and drive California's economic recovery. Likewise, protecting fish, wildlife, and habitat remains a bedrock commitment of State water policy. Stronger drought preparation and response helps us achieve these critical priorities.

Experience is a great teacher. By heeding lessons from the 2012-2016 drought, we will better protect communities, ecosystems, and our economy during drought and help our state thrive in a changing climate.

J.L C. 18

Wade Crowfoot, Secretary California Natural Resources Agency





CALIFORNIA'S WATER SUPPLY STRATEGY Adapting to a Hotter, Drier Future



CALIFORNIA'S WATER SUPPLY STRATEGY Adapting to a Hotter, Drier Future

This document outlines California's strategy and priority actions to adapt and protect water supplies in an era of rising temperatures.

Over the next 20 years, California could lose 10 percent¹ of its water supplies.

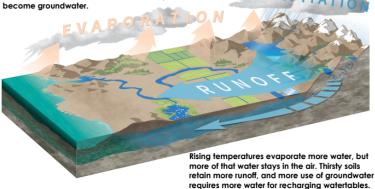
Our climate has changed, and the West continues to get hotter and drier. As it does, we will see on average less snowfall, more evaporation, and greater consumption of water by vegetation, soil, and the atmosphere itself.



In previous droughts the ratio of precipitation to evaporation to runoff has been similar. However, as temperatures rise, evaporation increases, with the consequence of a fall in runoff. As average temperatures continue to increase, the increase in evaporation will continue, with a concurrent drop in runoff.

The coming water cycle: the air claims more

In the water cycle, evaporation lifts moisture into clouds that drop precipitation, as rain or snow. This water becomes runoff that courses downhill on the surface, or into the soil to



¹ DWR estimates a 10% reduction in water supply by 2040. This is a planning scenario that considers increased temperatures and decreased runoff due to a thirstier atmosphere, plants, and soils. According to the California Water Plan Update, California's managed water supply ranges from 60-90 MAF per year so the effect of a drier climate results in a disappearance of about 6-9 MAF of water supply.

CALIFORNIA'S WATER SUPPLY STRATEGY - ADAPTING TO A HOTTER, DRIER FUTURE PAGE 1 of 16 AUGUST 2022

Short Break



For your work on drought risk, where do you spend most of your resources and time?

Participate!

Provide your organization's name and 1 to 3 programs or activities per quadrant. Fill as many quadrants as you can.



Menti.com code: 9208 1873

Instructions:

- > Access Menti from your phone or computer.
- > The opening quadrant is "Mitigation and Preparation."
- > Type your response to the question in the box.
- > To skip to another quadrant, click "submit" then "ok."
- > You will be able to go back to the previous quadrants and provide additional details.
- ➤ You may continue to add additional examples after the meeting.



DISCUSSION: DRIP COORDINATION



Follow up discussion

- ➤ Lessons learned what works that we can learn from, improve upon, and apply elsewhere?
- Where are the gaps that need attention?



Laura Jensen, California Water Commission

DROUGHT STRATEGIES TO PROTECT COMMUNITIES AND SPECIES



Water Resilience Portfolio Action 26.3

Develop strategies to protect communities and fish and wildlife in the event of drought lasting at least six years



Goal of Commission Process

- Engage experts, interested parties, public
- Develop potential long-term strategies
- Produce guidance document for Agency Secretaries



Today's Engagement

- Inform DRIP Collaborative about our work
- Receive feedback on our preliminary strategies
- Make connections between our similar efforts
 - Understand the Commission's process and public interface
 - DRIP can consider the Commission's work as DRIP makes decisions about its own work activities

	Commission's Work	DRIP Collaborative
Genesis	Water Resilience Portfolio	SB 552
Topic	Drought strategies to protect communities & species	Pre-drought planning, emergency response, and post- drought management
Duration	Two years	On-going
Work Product	White paper for Secretaries	Annual report to the Governor's Office and agency secretaries



Themes

- Leverage drought crisis to take bold action
- Plan, prepare, manage during non-drought
- Make systemic adaptations to climate change
- Advance portfolio approach
- Collect and use data for drought management
- Engage public to shift cultural norms
- Bring environment into drought management



Genesis of Preliminary Strategies

- Water Commission Drought Working Group
- Types of drought strategies:
 - 1. Surface storage
 - 2. Groundwater storage
 - 3. Conveyance, or "the grid"
 - 4. Demand management (includes water rights)
 - 5. Environmental and public protections



Preliminary Strategies

- Increase Capacity & Information Needed to Manage Drought
- 2. Scale Up Groundwater Recharge
- 3. Conduct Watershed-level Planning to Reduce Ecosystem Impacts of Drought
- 4. Better Position Communities to Respond to Drought Emergencies



1: Increase Capacity & Information Needed to Manage Drought

- Develop dedicated drought staff at State agencies to coordinate between agencies, across sectors, ID lessons learned and generate plan, collect/share consistent info on communities & species in crisis.
- 2. Support Tribes, local government, NGOs to increase drought response capacity.
- 3. Support seasonal forecasting to anticipate drought.
- 4. Develop consistent public information campaign by building on work already being done, creating indicators to signal drought status, engaging experts to change water behaviors in California.



2: Scale Up Groundwater Recharge

- 1. Prepare for recharge by identifying where recharge provides the greatest benefit and where it is possible.
- 2. Promote recharge efforts through on-going education, outreach, and incentives.
- 3. Support efficient permitting to maximize groundwater recharge by clarifying flood triggers, considering impacts to drinking water, and completing timely, comprehensive environmental review.
- 4. Support infrastructure connected to groundwater recharge, including fish screens, conveyance, and surface storage projects that can store water for recharge.
- 5. Review recent actions to clarify lessons learned and identify on-going improvements and efficiencies.



3: Conduct Watershed-level Planning to Reduce Ecosystem Impacts of Drought

- 1. Develop environmental watering plans for California by working at the watershed-scale to identify and plan for ecosystem water needs.
- 2. Integrate fire/forest management into drought planning.
- 3. Conduct watershed-scale habitat planning that inventories, prioritizes, and identifies funding mechanisms for habitat restoration and conservation projects.



4: Better Position Communities to Respond to Drought Emergencies

- 1. For small and/or rural, disadvantaged communities, allow delegation of funding management to local assistance providers with expedited State sign-off for pre-approved categories of activities and dollar thresholds to nimbly address system needs.
- 2. Ramp up efforts to improve water system resiliency and actions to increase supply reliability for communities.
- 3. Support integrated land and water planning, such as multi-benefit land repurposing, at the local level and encourage regional approaches to water resource management.



Timeline

Public Workshops (registration open now)

- Tuesday, July 25th 2pm-5pm
- Thursday, July 27th 9:30am-12:30pm

White Paper

Draft and final anticipated this fall





Lunch Break

Vallejo's Restaurant, 1900 4th St, Sacramento

(Corner of S and 4th Street)

Please join back at 1:30PM



Glen Low

THE ARC OF ENGAGEMENT



DRIP: Building a foundation for impact

Year 1 - Foundation Building

Shared process, initial ideation (needs, solutions), engagement

2023

Year 2 - Building Muscle

Content work, focused on early wins and demonstrating success

2024

Year 3 & Beyond – Implementation

High impact, more difficult work.

System change (as needed)

2025+



DRIP Accomplishments Over Time

What is the one thing members most hope DRIP accomplishes...

...in its first 1-2 years

"Provide clarity on existing metrics, tools, and programs for drought response. Understand how we collectively contribute and build on lessons learned. Identify areas that can lead to solutions for drought resilience."

"Identification of **drought resilience needs** by sector."

"A **roadmap**. Establish clear pathways. Concrete **action plan** that is agreed on by all parties."

...in years 3-5

"Implementing programs and guidance to support communities with water issues and conflicting water demand (ag and housing and domestic use)."

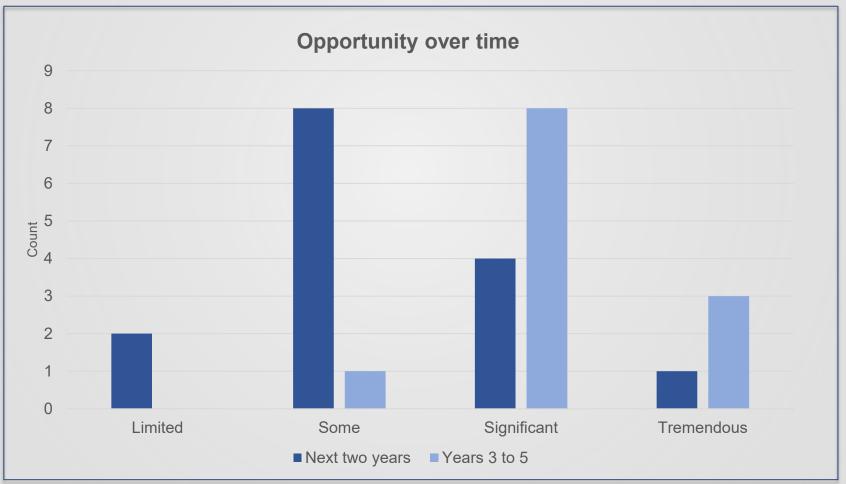
"Implement **meaningful solutions** that build capacity at local scales."

"Strategies to implement as appropriate around the state (more strategic than past grant processes)."

DRIP Opportunity

How much opportunity do members think exist for California to improve drought

resilience?





Focus Areas: Level of Engagement

Inform: Focus on learning. Promote information sharing and discussion of what others already have underway. As work completed by others, share best practices to scale success.

Complement: Identify opportunities for DRIP to drive enhanced coordination, building on already ongoing efforts. Contribute actions that fill a targeted gap in current efforts.

Lead: Lead a collaborative effort to address a problem that is not well addressed today. Identify means for fostering broad based coordination, defining new roles, and achieving success that isn't possible through existing organizational roles.



Two examples

Groundwater Recharge

Existing efforts. Mix of both State and local efforts to scale groundwater recharge:

- DWR Flood-MAR efforts
- State Water Board, streamlined permitting
- GSAs with GSP local project management actions
- Flood-MAR network
- Governor's Executive Order N-4-23

Possible DRIP role. INFORM, but possible COMPLEMENT role on select issues such as water quality monitoring, rural community capacity, etc.

Drought Tracking and Data

Existing efforts. Number of reporting efforts already underway, both by DWR and SWRCB

- Reporting: UWMP, conservation report, eAR, annual water and supply demand assessment, etc.
- SGMA, SB 19 stream gage, SB 88 water diversions
- State Water Board: Clearinghouse, UPWARD
- But limited ability to track drought resilience and key outcomes

Possible DRIP role. COMPLEMENT or LEAD role on select issues such as defining drought indicators, domestic well data gaps, seasonal forecasts





What's a Roadmap? It's an action plan that defines our collective work to achieve our purpose. Includes specific timeframes and milestones. Provides clarity on the role that DRIP will play and how it will directly improve drought resilience outcomes.

DEVELOPING A DRIP ROADMAP



Developing a DRIP Roadmap, Process

Inquiry: Gather and analyze content from Meeting 1, California drought resiliency resources, and DRIP member survey for comprehensive list of potential focus topics.

Synthesis: Identify common ideas and categorize into broad themes to facilitate and advance discussion.

Exploration: Convene and discuss to gauge DRIP member interest, alignment with purpose, engagement level, and opportunities to include in the roadmap.





Developing a DRIP Roadmap, Outputs

Inquiry: Reference List

Documentation of all captured concepts in the inquiry process, with minor consolidation.

Synthesis: Thematic Groups

- > Data Integration & Sharing
- > Education, Awareness, Messaging
- Cross-Sector Partnerships and Preparedness
- Water Resource Management & Infrastructure
- Policy, Funding & Financial Assistance

Inquiry t: Reference

Output: Reference List

Synthesis

Output: Thematic Areas

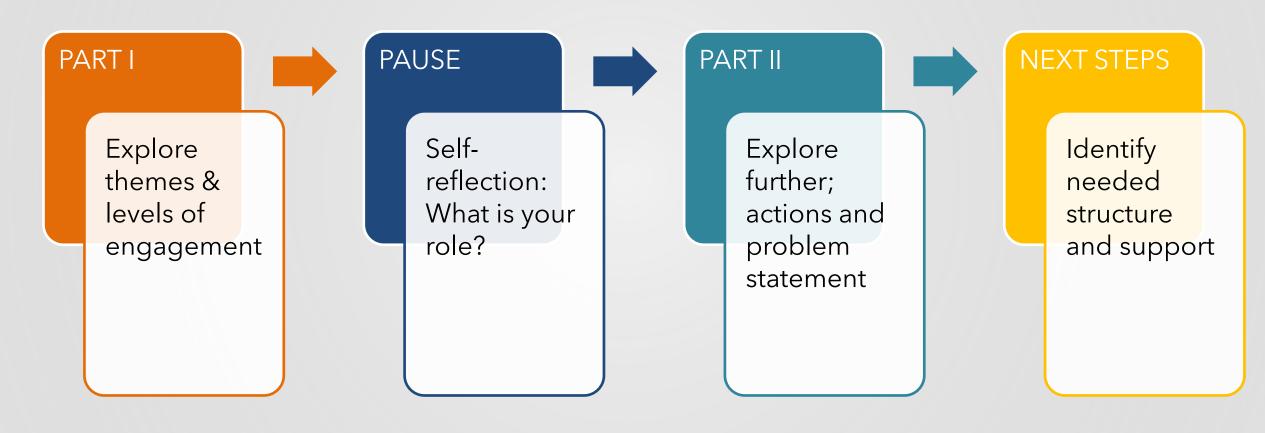
Exploration

Identify Areas of Interest/Impact



Developing a DRIP Roadmap

Structure of discussion ahead:





DEVELOPING A DRIP COLLABORATIVE ROAD MAP – PART I

- 1. Data Integration & Sharing
- 2. Education, Awareness, Messaging
- 3. Cross-Sector Partnerships and Preparedness
- 4. Water Resource Management & Infrastructure
- 5. Policy, Funding & Financial Assistance



Instructions For Breakout Part I

Form a topic-specific discussion group

- 1. Join one of the five discussion tables:
 - Data Integration & Sharing
 - Education, Awareness, Messaging
 - Cross-Sector Partnerships and Preparedness
 - Water Resource Management & Infrastructure
 - Policy, Funding & Financial Assistance
- 2. Identify a group host and a note taker to track key ideas on the provided template.
- 3. Use the template to manage time to ensure that all topics are addressed.

Discussion outcome: Identify appropriate level of DRIP engagement for the identified topics.



Template Walk Through

A. Review the list of broad topics

B. Identify how these topics are currently being addressed.

C. Consider how DRIP can be of added value (Inform, Complement, or Lead).

_	(A) Broad topics	(B) How is this topic addressed currently?	(c) DRIP appropriate level of Engagement (Inform, complement, Lead)
	Drought Tracking and Data	Number of reporting efforts already underway, both by DWR and SWRCB	Complement/Lead on selected issues such as defining drought indicators, domestic well data gaps, seasonal forecasts



PAUSE FOR SELF-REFLECTION AND

SHORT BREAK



Based on your breakout discussion, please consider

- > Your level of engagement
- What topic you are excited to work on between now and the October meeting



DEVELOPING A DRIP COLLABORATIVE ROAD MAP – PART II



- What can be accomplished this year between this meeting and the October meeting?
- Who wants to lead and contribute to these efforts?



Part II Prep: Guiding Principles

Embrace Ambition: There is tremendous opportunity! Remember why you're here and prioritize your passion.

Recognize limitations: Be realistic. Members that responded to the survey reported, on average, being able to commit and additional **3.5 hours per month** to DRIP efforts with a range from 1.5 to 9 hours.

Leverage other resources: What might your agency or organization contribute? Of all survey respondents, **75% identified potential additional resources** to contribute towards DRIP efforts

Find synergies: Collaborate within the Collaborative. Members have highlighted many ways to work together ("How might we work together" slide in this presentation), now is the time to define that further.

"We can find efficiencies and guidance working together, so **time is well spent**."
- Sierra Ryan, Santa Cruz County



Instructions For Breakout Part II

Explore further: Actions, problem statements and next steps

Rejoin your group, identify a report-out person, and address the following questions:

- 1. Review the level of engagement identified in breakout part I and identify which of the topics you are interested in working on with other DRIP members. Add 1-2 ideas from Table 1 to Table 2 for the next steps.
- 2. Drill down and develop a specific problem statement and desired outcomes.
- 3. What are the next steps between the July and the October DRIP meetings?
 - Who needs to be part of this work?
 - What is the timing to accomplish this work?
 - What are the immediate steps to get going?
 - What are the long-term goals?
 - What information is needed?

Discussion outcome: Report out one or two ideas for DRIP to move forward on.



Template Walk Through

A. Which of the topics are you interested in working on with other DRIP members?

B. What is the appropriate level of DRIP engagement?

D. What are the next steps?

B. Drill down and develop a specific problem statement and desired outcomes.

(A) Potential DRIP Actions	(B) Inform/ Complement /Lead	(c) Problem Statement and Desired Outcomes.	(D) Next Steps between July and October
Communicating the impacts and importance of drought through effective narratives	Complement/Lead	We need a shared definition of drought that can be used throughout the state	Collect existing drought definitions. Identify the perspective that need to be part of a working group to develop a shared drought definition.
California DRIP Collaboration	rative		

REPORT OUT AND INVITATION TO PARTICIPATE

- What can be accomplished this year between this meeting and the October meeting?
- > Who wants to lead and collaborate on these efforts?





Virtual Participants:

- Raise your hand with the "Raise Hand" feature in Zoom and you will be asked to unmute and speak.
- Alternatively, you can share a comment in the Q&A panel to be read aloud.
- If you are dialing in by phone, dial *9 to raise your hand and dial *6 when it you are called on to speak.

PUBLIC COMMENT



Next Steps & Reflections

- ?
- What do you need to be successful in following up on the key ideas that were generated for action today?
- What is one things that you are clearer on now?





Adjourn

Thank you!