



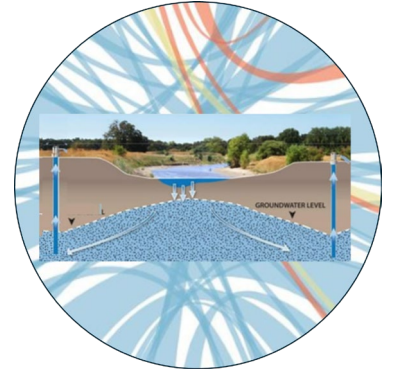
Sustainable Groundwater Management Update

The California Department of Water Resources



Topics for today

- Water trading and market development
- General SGMA progress update
- Semi-Annual Groundwater Conditions update



Update on Water Resiliency Portfolio Item 3.6 – Water Trading and Markets

Water trading and markets background

Water Resilience Portfolio (2020)
Governor's Office



White Paper (2021)
California Water Commission



Interagency Workplan (2024, pending)
DWR - lead

Water Resilience Portfolio (2020)

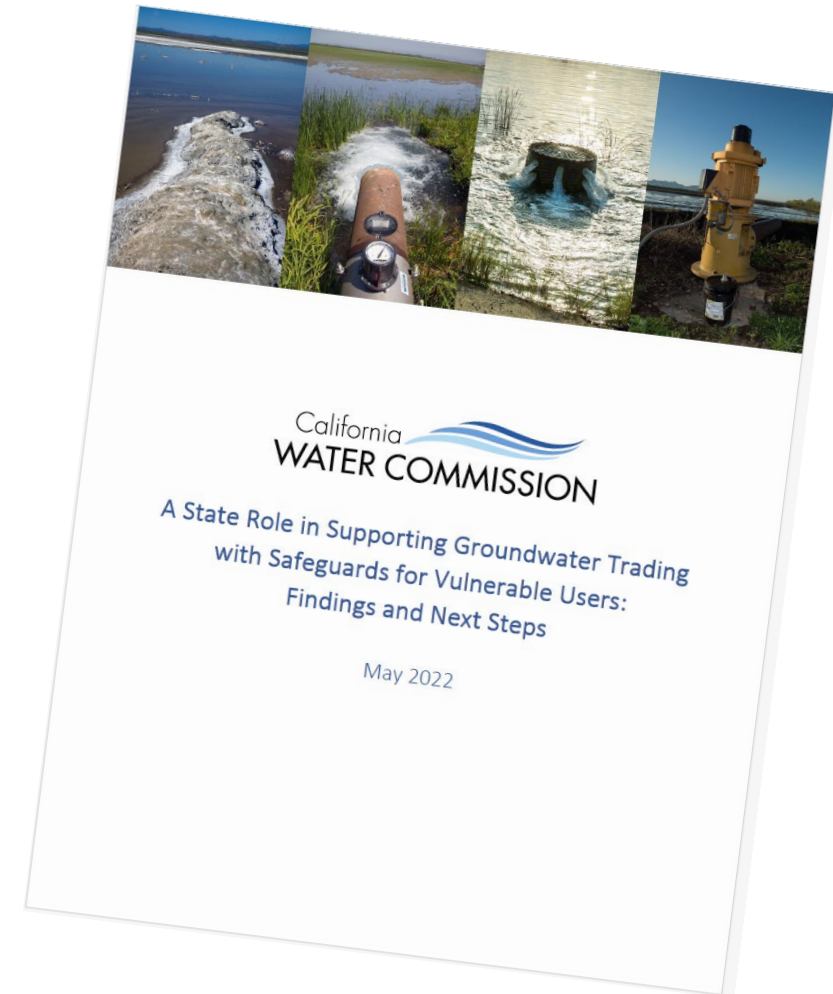
Action 3.6

Directs an interagency team to,

“create flexibility for GSAs to trade water within basins by enabling and incentivizing transactional approaches, including **groundwater markets, with rules that safeguard natural resources, small- and medium-size farms, and water supply and quality for disadvantaged communities.**”

California Water Commission White Paper

- Developed at request of Agency Secretaries
- Supported by outreach through surveys, small group discussions, and workshops
- Evaluated existing practices
- Provided Findings and Recommendations for State Agencies



Interagency Workplan Initial Steps

- Work has begun
- Interagency Team
 - DWR, SWRCB, CDFA, CDFW
- Facilitated Process
 - Capture agency policy perspectives
 - Set clear goals
 - Points of alignment and divergence
 - Workplan development in progress



Environmental protections of fish, wildlife, and wetlands



Human Right to Water and Tribal Equity



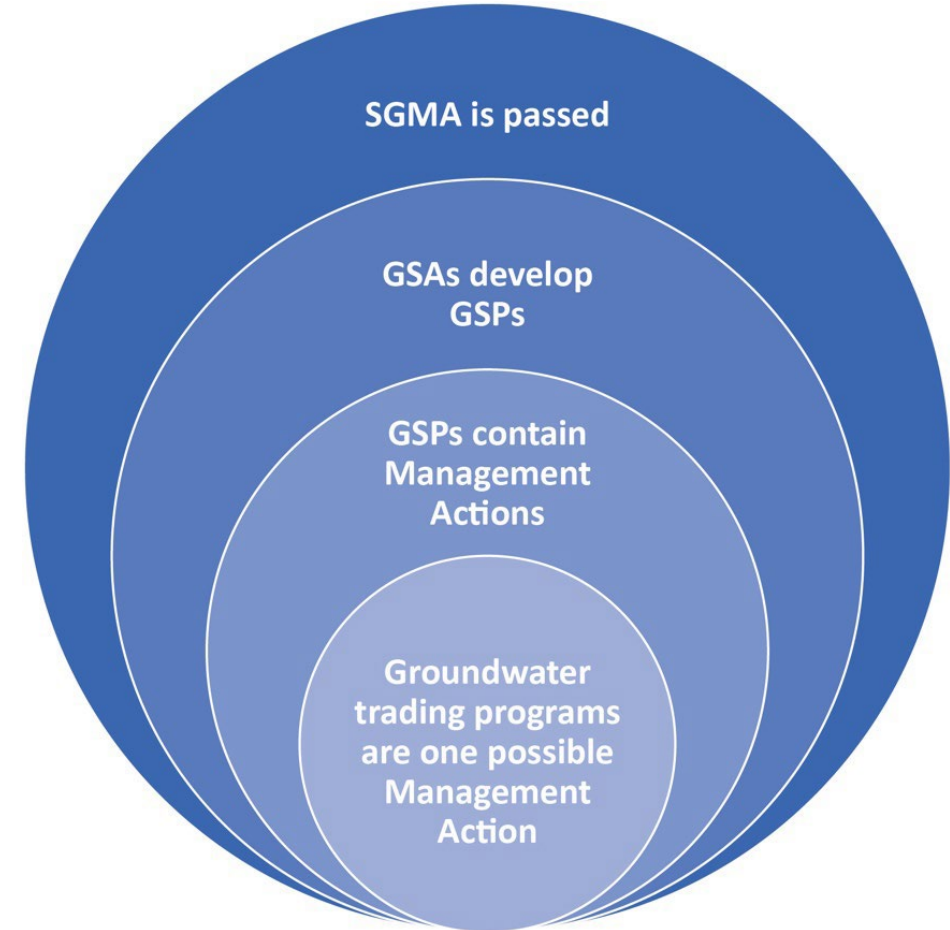
Local control as emphasized by SGMA



Farmer Equity Act and prioritization of small & mid-size farmers

Incorporating CWC White Paper Recommendations

- Learning from early GW markets
 - Rosedale–Rio Bravo/EDF
 - Fox Canyon
 - Madera
- Defining critical terms and goals
- Allowing SGMA Implementation
- Outreach and Engagement
- Develop guidance, data, assistance, and incentives



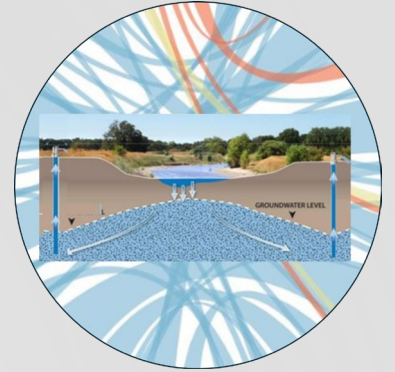
Water Trading Next Steps

Group 1 Actions - Immediate

- Finalize Interagency workplan
- Engage with stakeholders
- Work on key points with stakeholders
 - Local control vs. State oversight
 - Customization vs. Standardization
 - Transparency vs. Confidentiality
- Develop reliable trusted data
- Develop supportive guidance

Group 2 Actions - As appropriate

- Examine existing State agency authorities for oversight
- Create standard principles and rules to build confidence in markets
- Create oversight mechanisms to evaluate efficacy of developing trading platforms and markets



SGMA Implementation Update

Groundwater Sustainability Plan Determinations

71
Basins

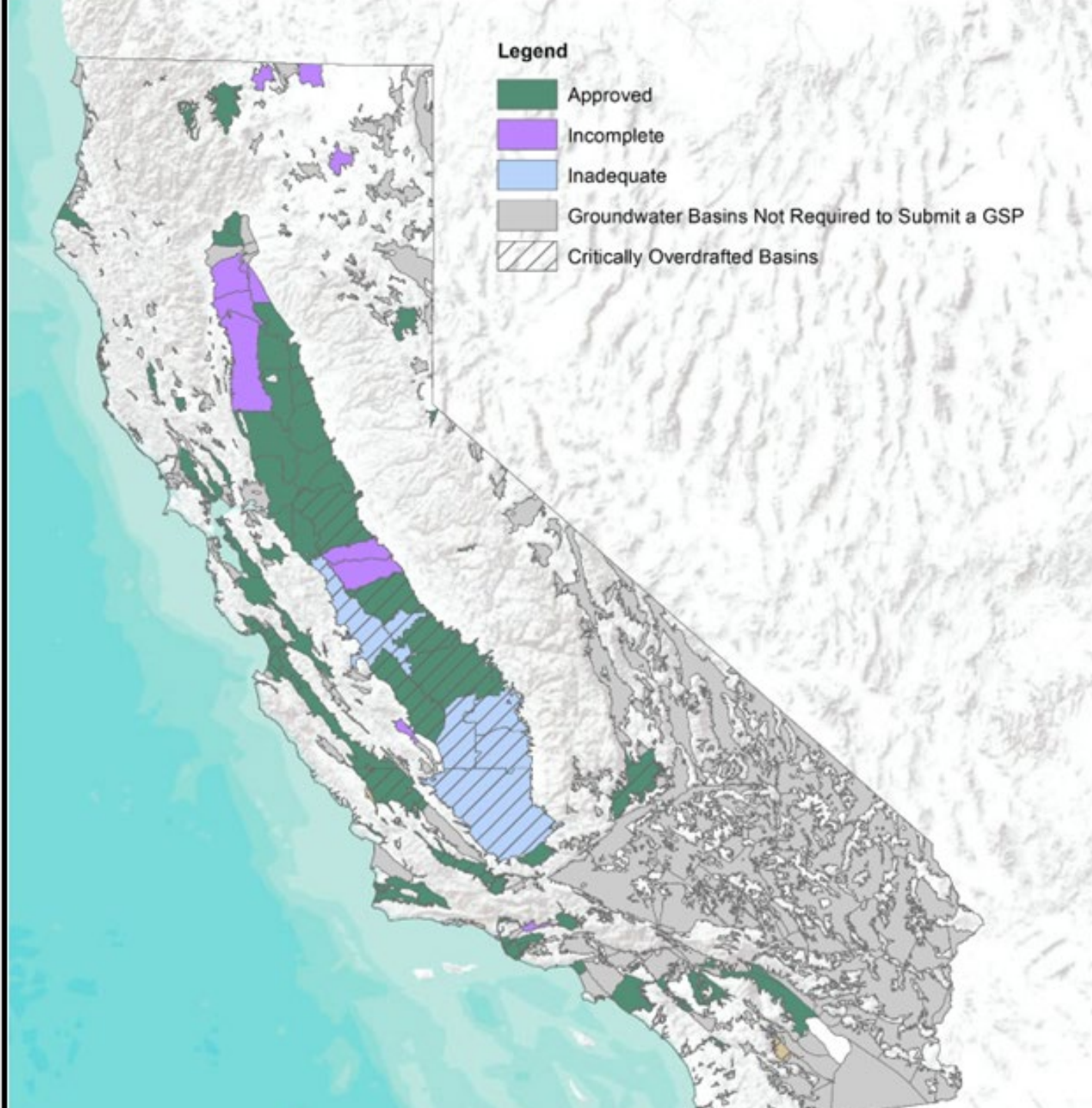
APPROVED BASINS

13
Basins

INCOMPLETE BASINS

6
Basins

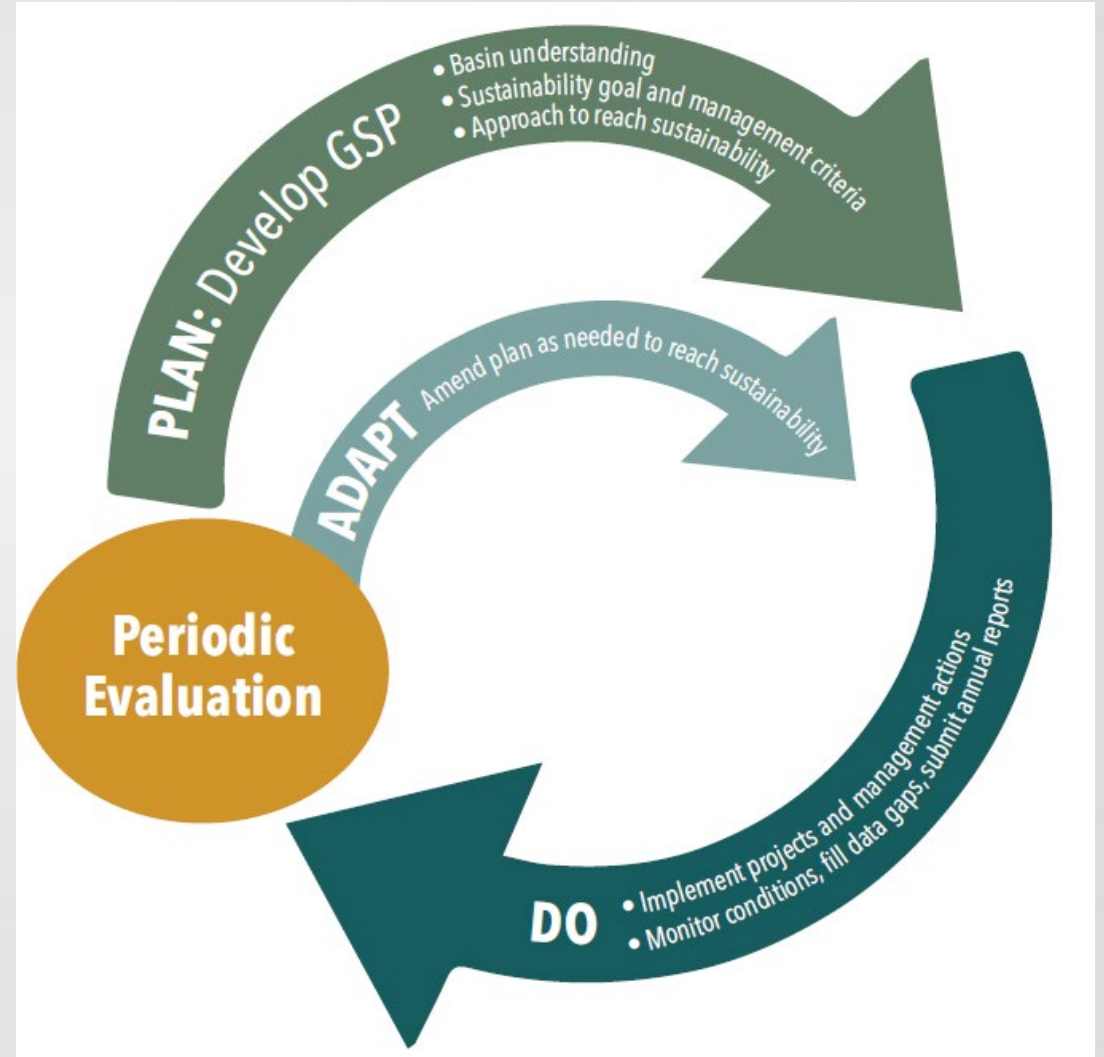
INADEQUATE BASINS



SGMA Implementation: 20 Year Horizon

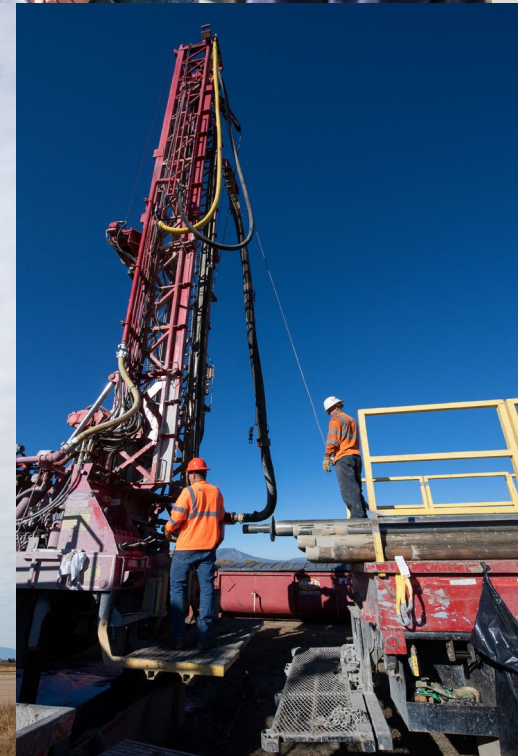
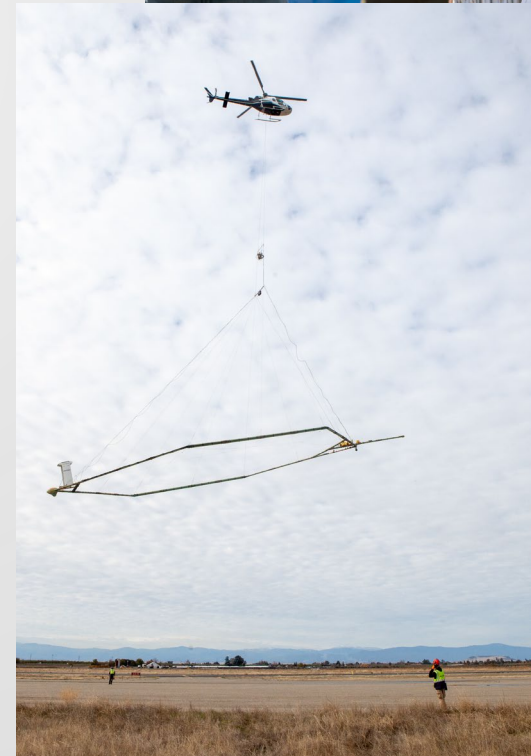
Implementation Guidance

- Annual Reports
- Periodic Evaluations
- Plan Amendments



Transitioning to Implementation: Basin Stewardship

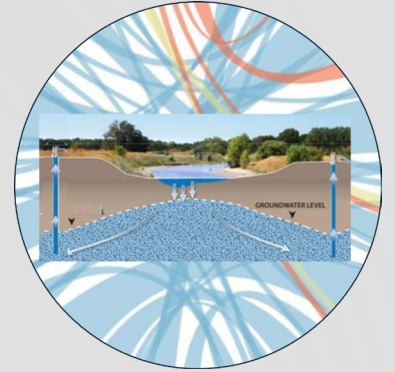
- Support & Track GSP Implementation
- Engage with Groundwater Sustainability Agencies
- Facilitate Intra- and Inter-Basin Coordination
- Release New Guidance
- Collect and Distribute Transparent Data
- Conduct Basin Characterization
- Advance Modeling Resources
- Develop Adaptation Strategies
- Collaborate with State and Federal Agencies



Upcoming Guidance

- Interconnected Surface Water
Target: Starting Winter 2023 to 2024
- Subsidence
Target: Fall 2024
- Water Market Recommendations
(CWC)

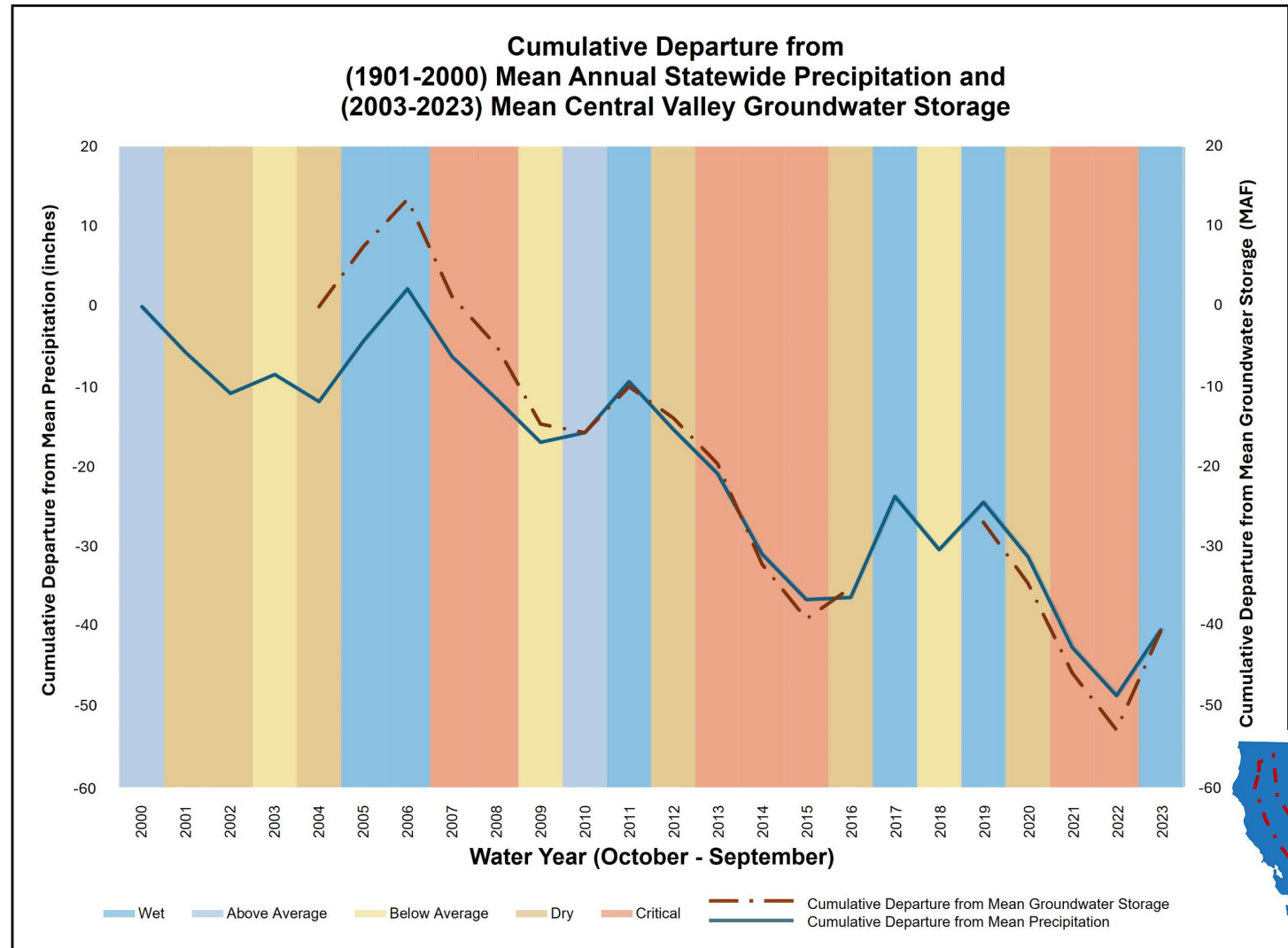




Semi-Annual Groundwater Conditions Report

Context of Water Year 2023 Hydrology and Groundwater Storage Changes

- WY23 greatly benefited surface water resources and marked the beginning of groundwater level recovery after many years of chronic decline.
- However, one year of heavy precipitation will not refill groundwater basins that have been depleted over decades.



Water Year 2023 Groundwater Summary

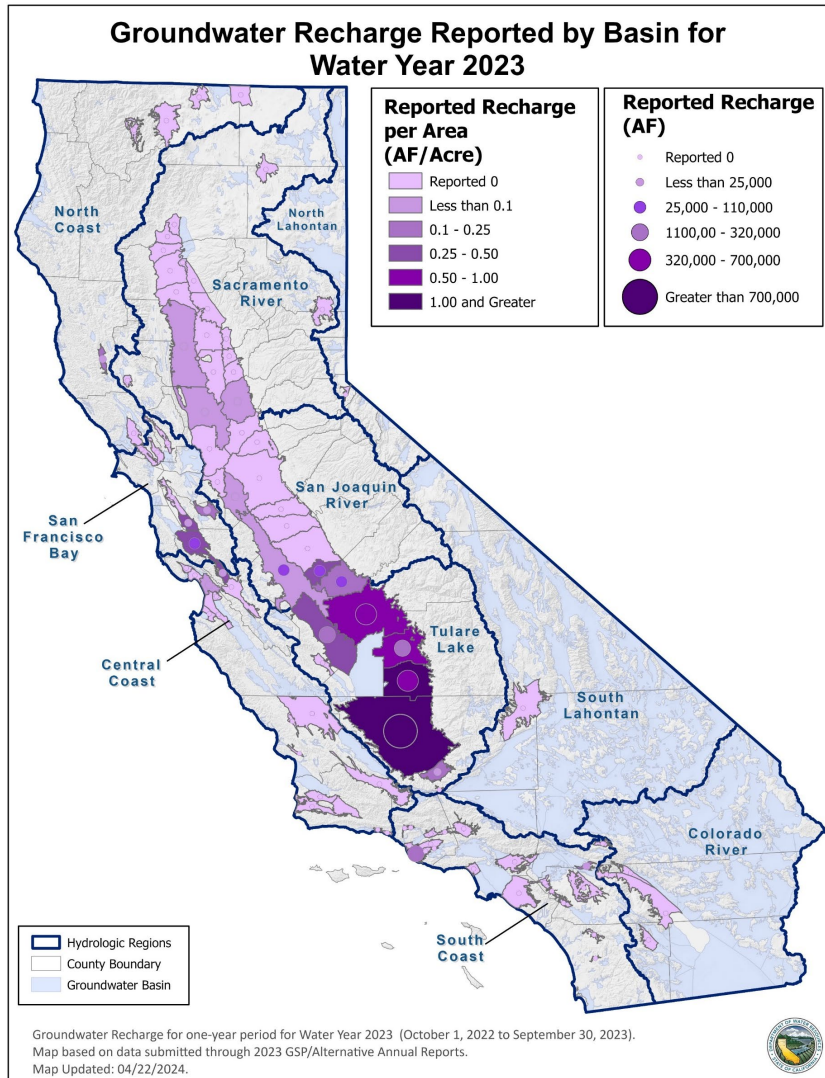
- Latest Reported Data from (99) Groundwater Sustainability Plan & Alternative Plan Annual Reports
 - These 99 basins account for 90% of all groundwater pumping in 515 groundwater basins

GW Pumping ↓	+	Managed Recharge ↑	=	Change in Storage ↑	GW Conditions ↑
WY23: 9.7 MAF		WY23: 4.1 MAF		WY23: +8.7 MAF	Increased GW Levels
WY22: 17 MAF		WY22: 315 TAF		WY22: -6.4 MAF	Less Subsidence
WY21: 18 MAF		WY21: 205 TAF		WY21: -7.9 MAF	Fewer Dry Wells
		WY20: 525 TAF			
		WY19: 2.1 MAF			

- DWR's Spring Semi-Annual Groundwater Conditions Report, released **May 6**
 - <https://data.cnra.ca.gov/dataset/california-s-groundwater-semi-annual-conditions-updates/resource/ba12c11f-b8b8-4d37-a9e4-13c2d7831285>

WY2023 Groundwater Summary – Managed Recharge

Total Managed Recharge: 4.1 MAF (Statewide), 3.9 MAF (94% Central Valley), 3.8 MAF (93% San Joaquin Valley)



Water Year	Water Year Type	Number of Basins Submitting Annual Reports	Number of Basins Reporting Managed Recharge	Managed Aquifer Recharge Volume (AF)
WY 2019	Wet	23	9	2,144,610
WY 2020	Dry	26	8	525,059
WY 2021	Critical	94	12	205,428
WY 2022	Critical	98	15	315,089
WY 2023	Wet	99	21	4,136,259

WY 2023 – State Supported Recharge Actions

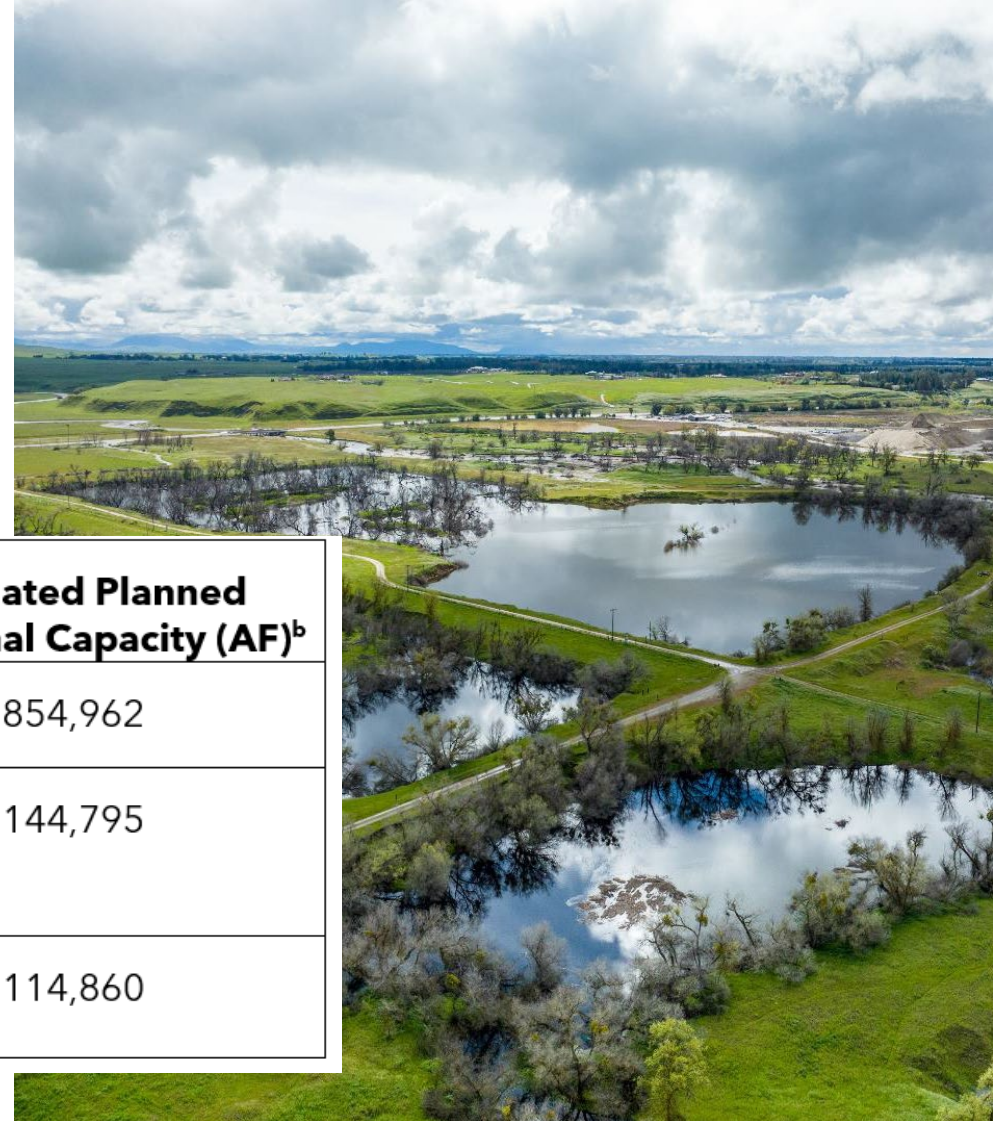


Diversion Source	Reported Diversions (acre-feet)	Permitted Capacity (acre-feet)	Data Source
Executive Orders	401,403	Not applicable	Governor's Executive Orders N-7-23 & N-4-23 For Flood Diversion
Water Code § 1242.1	0	Not applicable	Flood Recharge Diversions (Water Code §1242.1)
SWRCB Temporary Permits - Underground Storage	20,031	669,353	Pending Temporary Permits for Underground Storage
SWRCB Temporary Use Change Petition - United States Bureau of Reclamation	20,677	602,182	Temporary Urgency Change Petitions
DWR's Temporary Flood Diversion and Recharge Enhancement Initiative	10,837	Not applicable	Participating Local Agency Reporting
Total	452,948	1,271,535	

WY 2023 – Recharge Capacity

Since 2018, DWR has awarded over \$121 million to 69 groundwater recharge projects.

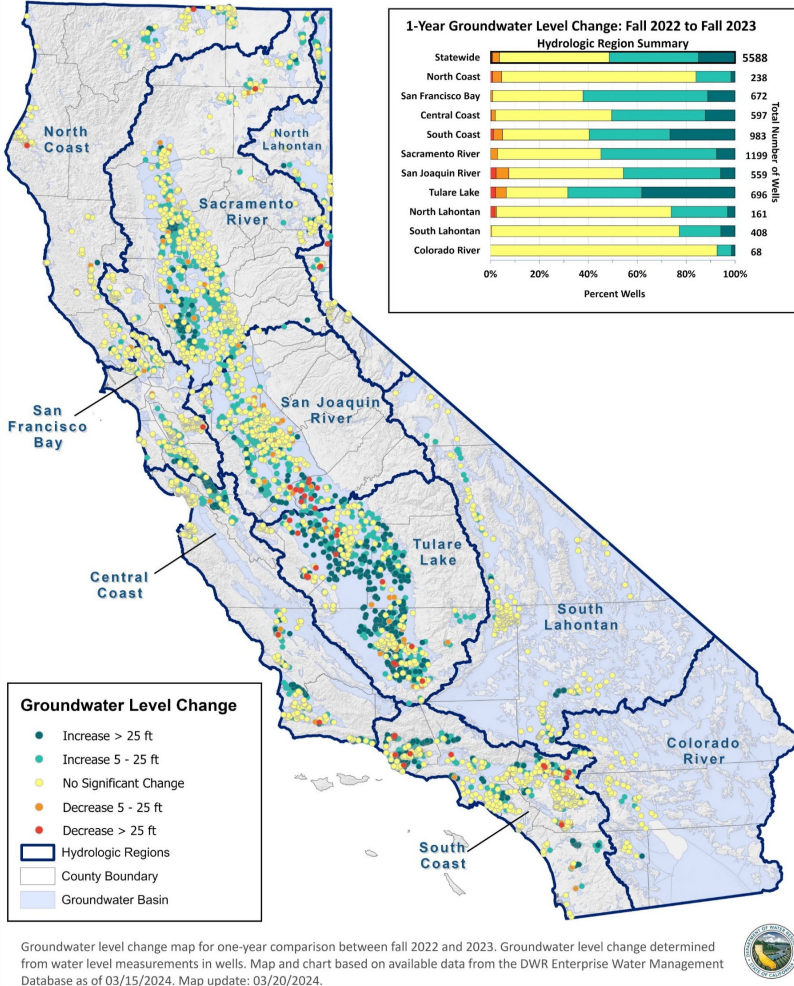
California’s natural groundwater infrastructure is immense, with groundwater basins providing between 850 million to 1.3 billion acre-feet of storage, which is about 32 to 50 times more than the combined storage of about 26 million acre-feet in the state’s surface reservoirs



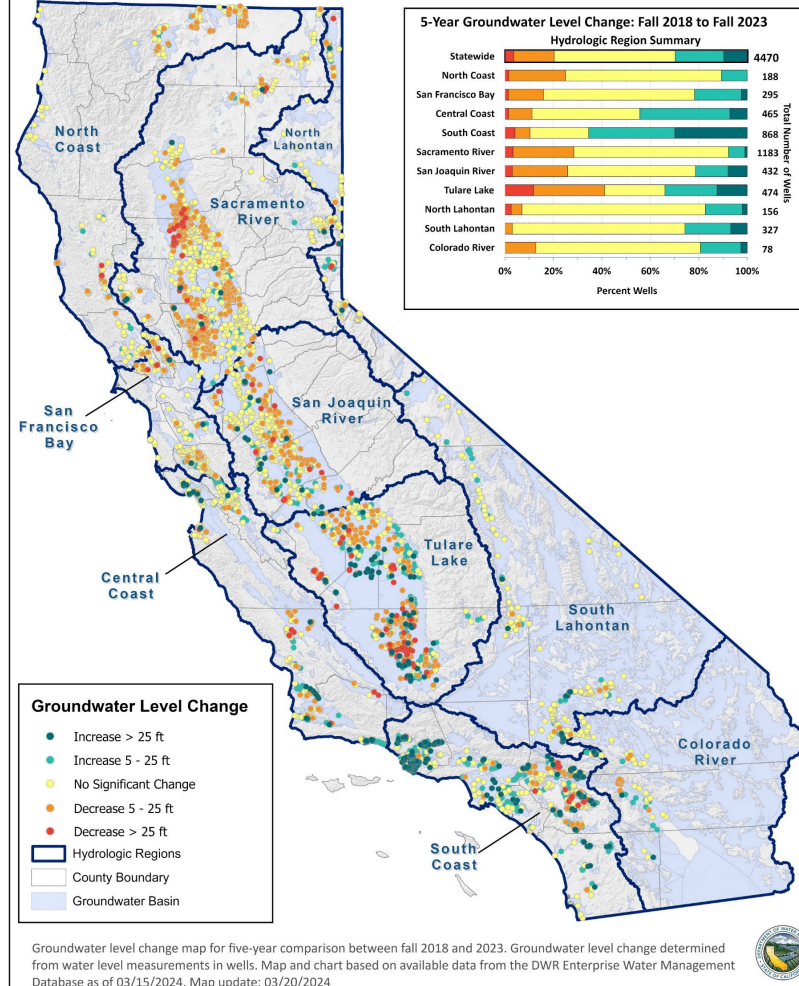
	Total Number of Projects	Existing Capacity (AF)^b	Estimated Planned Additional Capacity (AF)^b
GSP Recharge Projects	357	2,251,572	854,962
Executive Order CEQA Exemptions for Recharge Projects	24	Not applicable	144,795
DWR Financial Assistance for Recharge Projects	69	Not applicable	114,860

WY2023 Groundwater Summary – GW Levels

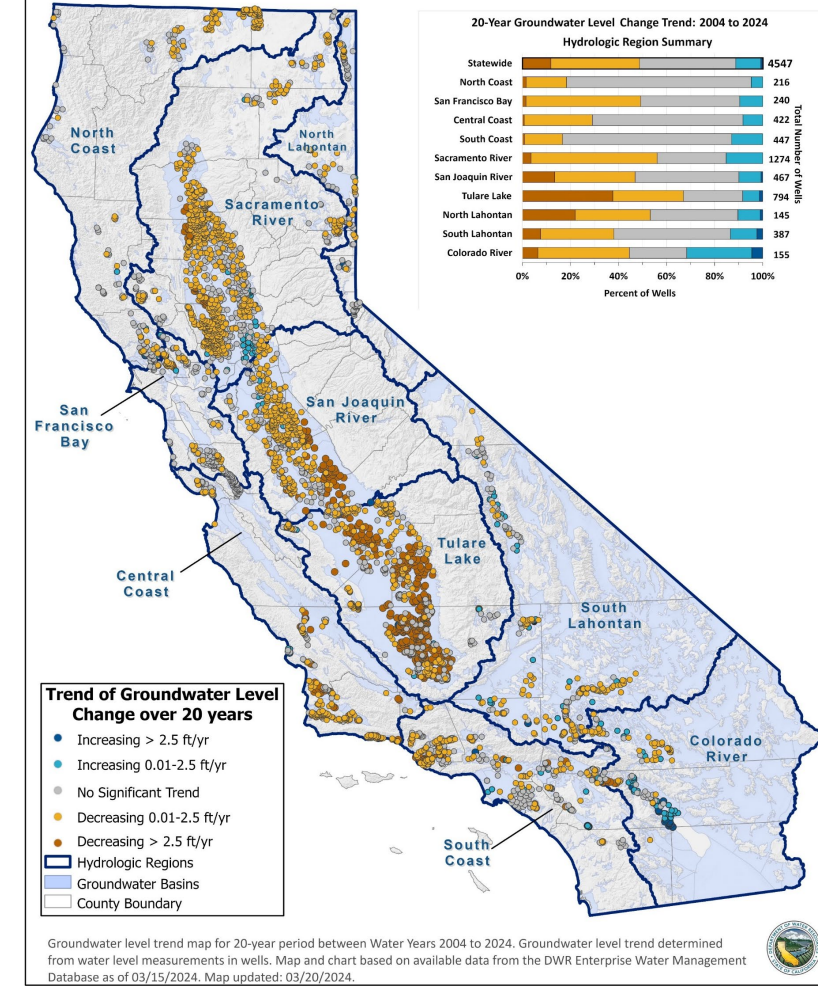
One-Year Groundwater Level Change Fall 2022 to Fall 2023



Five-Year Groundwater Level Change Fall 2018 to Fall 2023



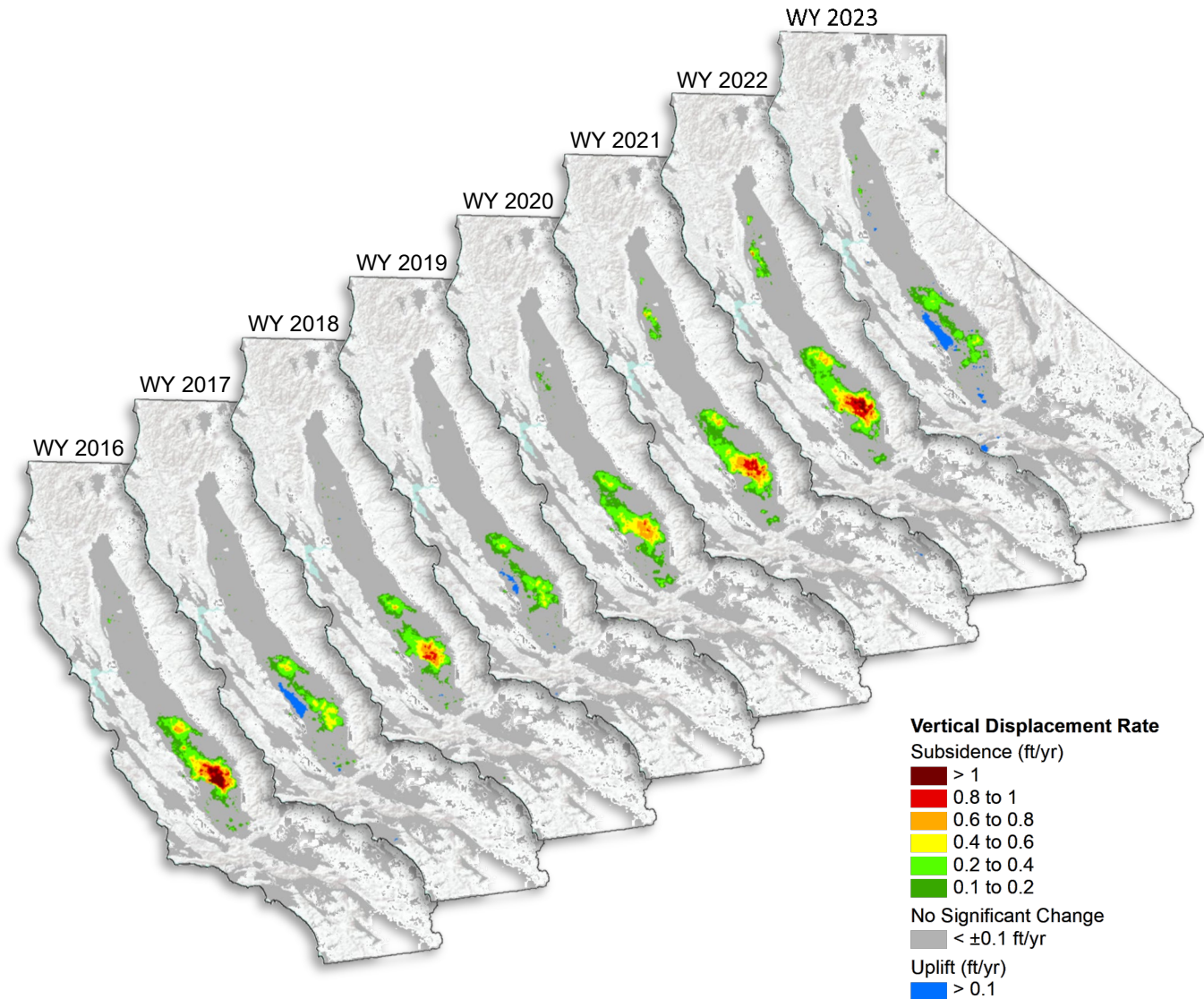
Twenty-Year Groundwater Level Trend Water Years 2004 to 2024



Recent Subsidence Data

- Since 2015, there have been significant improvements to the state's subsidence monitoring network, most notably the processing and reporting of satellite based Interferometric Synthetic Aperture Radar (InSAR) data, which provides monthly subsidence data for more than 150 groundwater basins and covers about 40,000 mi².
- In 2022, DWR has increased the reporting frequency of monthly InSAR data from annually to quarterly to provide more up-to-date information.

<https://data.cnra.ca.gov/dataset/tre-altamira-insar-subsidence>



Thank You



CALIFORNIA DEPARTMENT OF
WATER RESOURCES

