Environmental, Social, Cultural and Political Justice Of Water in California

Dr. Samuel Sandoval Solis
Professor and Specialist in Water Management
University of California, Davis

UNIVERSITY OF CALIFORNIA
Agriculture and Natural Resources

UCDAVIS WATER MANAGEMENT LAB

California Institute for Water Resources

Outline

UCDAVIS WATER MANAGEMENT LAB

- Definition
- Human Right to Water
- Human Right to Sanitation
- Representation in Decision Making

Environmental, Social, Cultural and Political Justice

Definitions of Env. Justice (EJ)

"EJ embraces the principle that all people and communities are entitled to equal protection of environmental and public health laws and regulations." Robert Bullard (1993)

"EJ links social justice and environmental sustainability by asserting that the benefits and burdens of environmental change must be equitably shared, especially among marginalized communities. Agyeman, Bullard, & Evans (2002).

"EJ is a pluralistic concept involving the distribution of environmental goods and bads, recognition of diverse identities and experiences, and participation in decision-making." Schlosberg, D. (2007)

"EJ is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies." EPA (1998)

EJ for the State of California (Cal-EPA)

Environmental Justice

Fair treatment and meaningful involvement of people of all races, cultures, incomes, and national origins, with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies.

(a) The availability of a healthy environment for all people
(b) The deterrence, reduction, and elimination of pollution burdens for communities experiencing the adverse effects of that pollution.
(c) Governmental entities engaging with communities most impacted by pollution to promote their meaningful participation in environmental and land use decision making process.
(d) The meaningful consideration of recommendations from communities most impacted by pollution into environmental and land use decisions.

[**California Government Code Section 65040.12(e)**]

EJ related to water (SWRCB)

Human right to water

"It is hereby declared to be the established policy of the state that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes."
[**California Water Code Section 106.3, AB 685**]

Human right to sanitation

"it is critical to protect drinking water and groundwater supplies from inadequate onsite sewage treatment systems"
[California Water Code Section 106.3, AB 685]

Characteristics

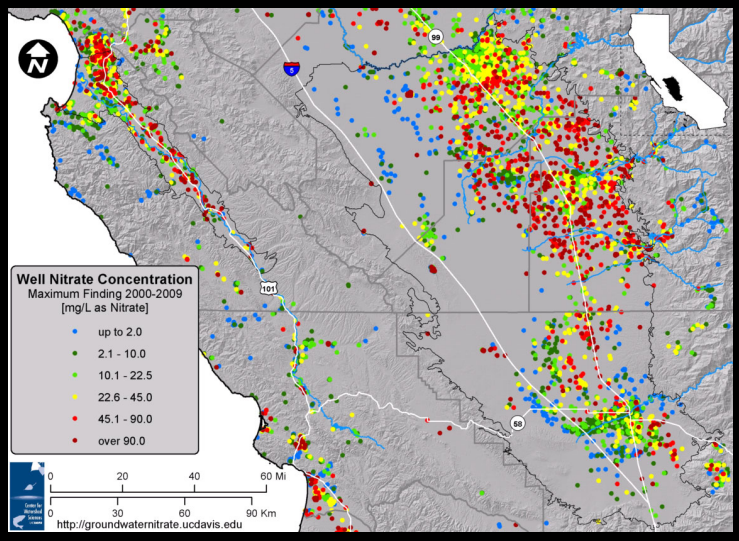
-Environmental:
- equal protection of environmental and public health
- equitable distribution of environmental goods and bads

-Social:
- all people and communities, regardless of ethnicity, color, national origin, or income
- fair treatment of all people

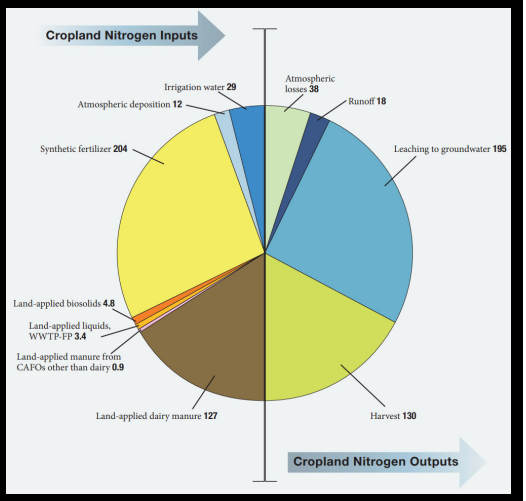
-Political:
- participation on decision making,
- meaningful involvement in the development of laws, regulations and policies

Environmental Justice

Irrigated Lands Regulatory Program

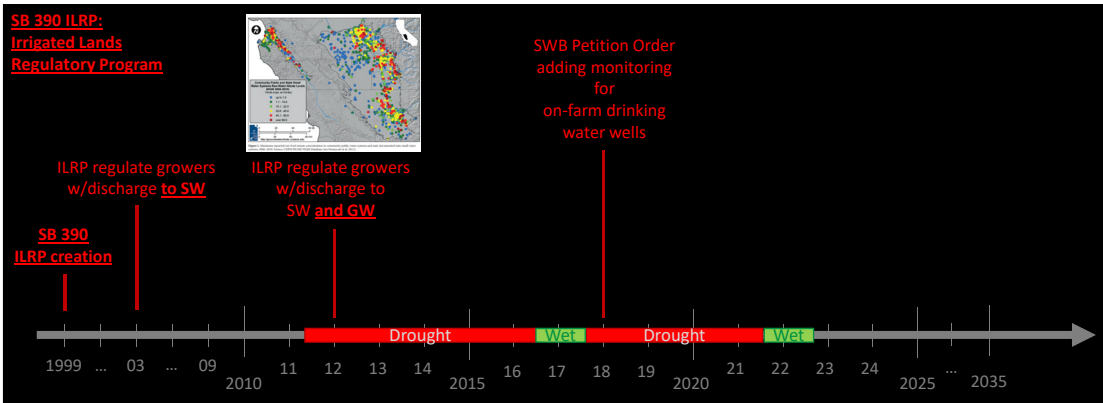


2003 – Ag. Runoff;
2012 – Groundwater Contamination



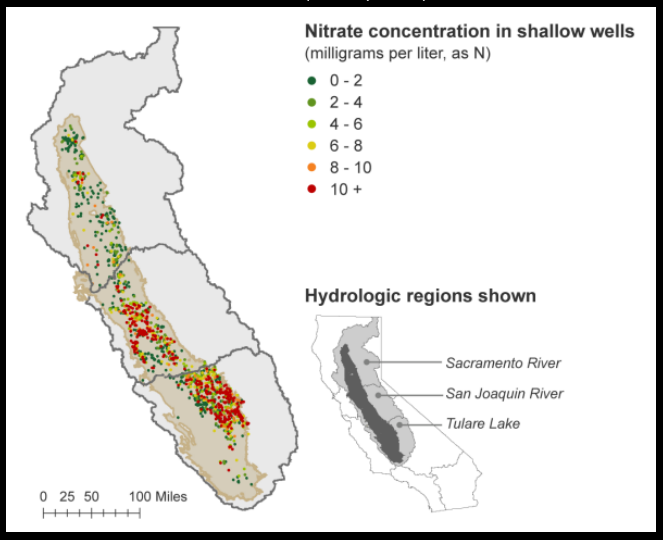
RED: ABOVE THE NITRATE MCL (45 mg/L)
DARK RED: ABOVE TWICE THE NITRATE MCL (90 mg/L)

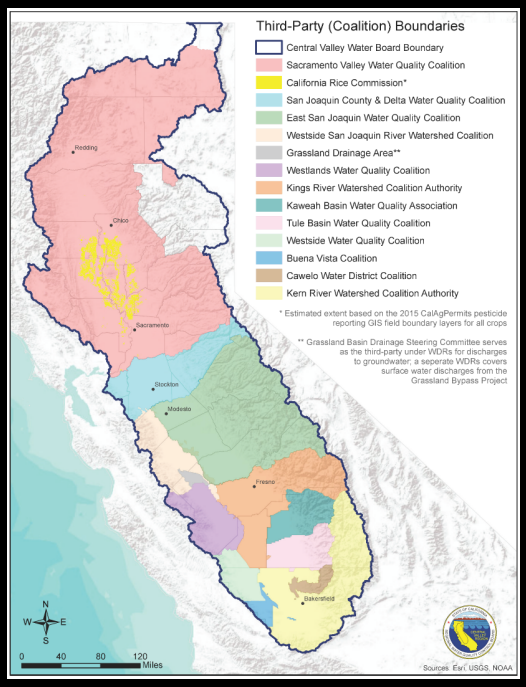
* Harter et al. (2012). "Addressing Nitrate inn California's Drinking Water" <http://groundwaternitrate.ucdavis.edu/>

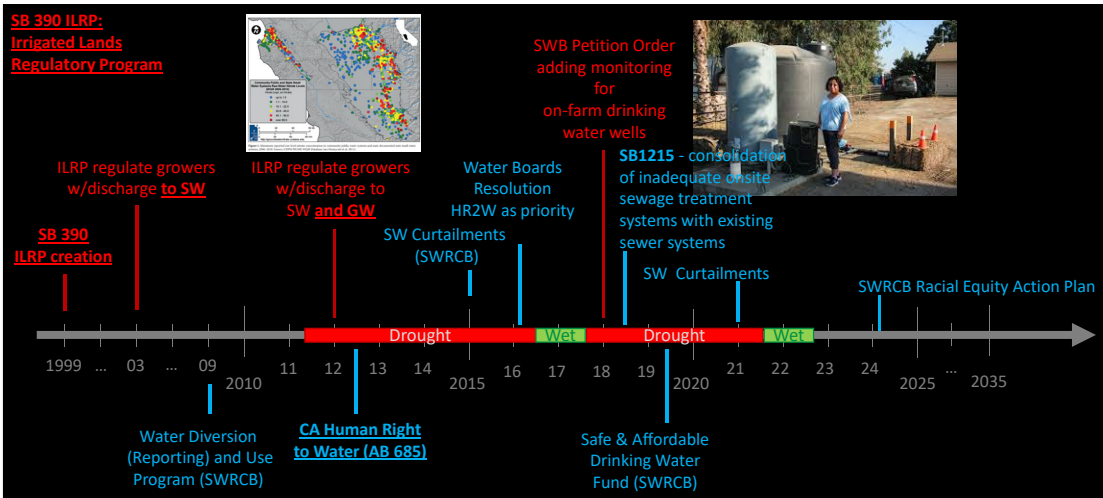


California Ag. Coalition Map

Water and the future of San Joaquin Valley PPIC report







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Human Right to Water

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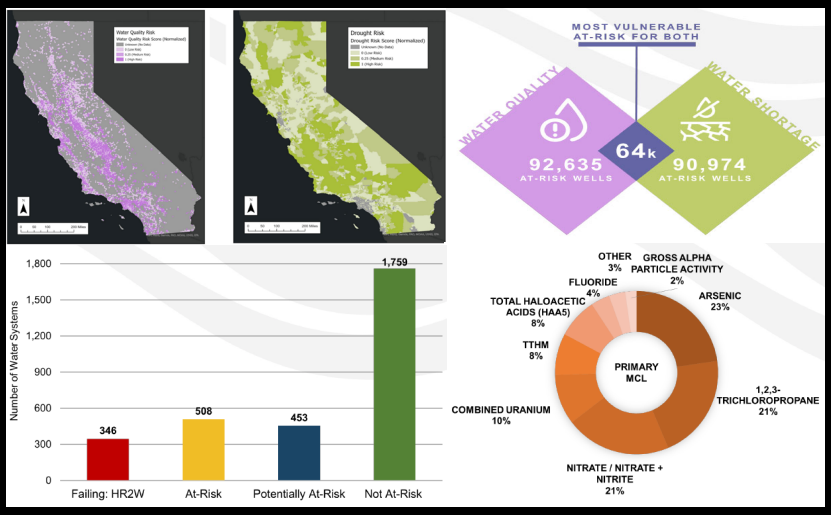
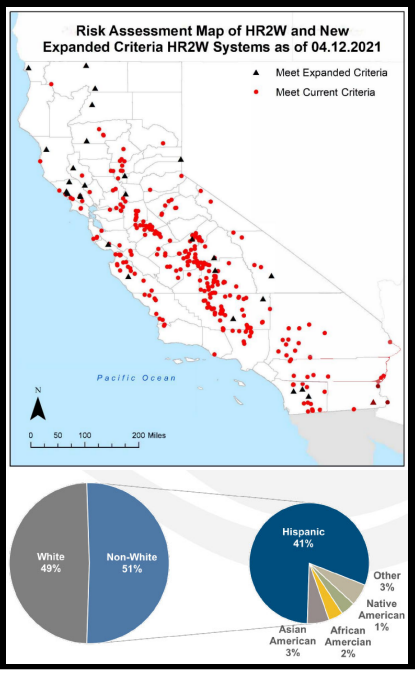
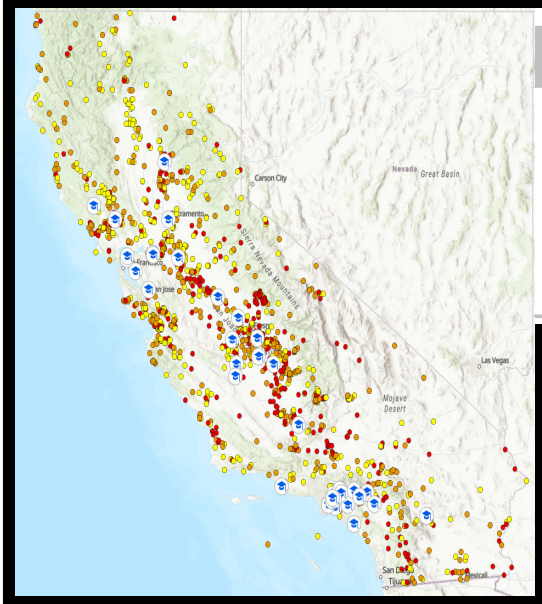
2016 – SWRCB resolution that HR2W as a priority
2019 – SAFER (Safe and Affordable Funds for Equity and Resilience)

Human Right to Water



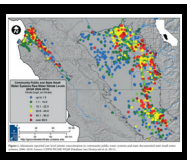


Water Systems



Failing	At-Risk	Potentially At-Risk
Water Systems **388**	Water Systems **494**	Water Systems **460**
Population **2,021,611**	Population **1,401,659**	Population **1,519,875**
Funding Since 2017 **$266,427,560**	Funding Since 2017 **$164,033,155**	Funding Since 2017 **$184,780,090**

SB 390 ILRP: Irrigated Lands Regulatory Program



ILRP regulate growers w/discharge **to SW**

ILRP regulate growers w/discharge to SW **and GW**

SWB Petition Order adding monitoring for on-farm drinking water wells

Water Boards Resolution HR2W as priority

SB1215 - consolidation of inadequate onsite sewage treatment systems with existing sewer systems

MLRP Round 1 &2

SB 390 ILRP creation

SW Curtailments (SWRCB)

SW Curtailments

SWRCB Racial Equity Action Plan

Drought | Wet | Drought | Wet

1999 … 03 … 09 2010 11 12 13 14 2015 16 17 18 19 2020 21 22 23 24 2025 … 2035

Water Diversion (Reporting) and Use Program (SWRCB)

CA Human Right to Water (AB 685)

Priority Basins (SGMA)

Sustainable Groundwater Management Act (SGMA) (DWR+SWRCB)

GSA Creation

Safe & Affordable Drinking Water Fund (SWRCB)

GSP Submission

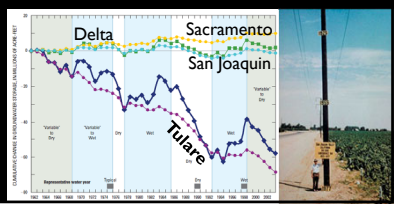
Basins declare probationary

SWRCB stepping in probationary basins

SGMA (SB) GW must be managed sustainably for long-term reliability and multiple benefits for current and future beneficial uses, it will be best achieved locally through plans and programs based on the best available science.

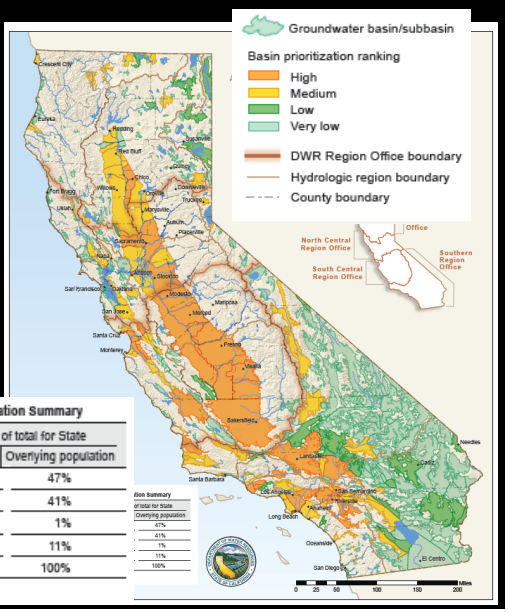
2012 – AB 685 HR2W in California: "It is hereby declared […] that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes."

MLRP Multibenefit Land Repurposing Program: "to increase regional capacity to repurpose agricultural land to reduce reliance on groundwater while providing community health, economic wellbeing, water supply, habitat, and climate benefits."



SGMA: Sustainable Groundwater Management Act (2014)

What?
- **6 Avoid Undesirable Results**

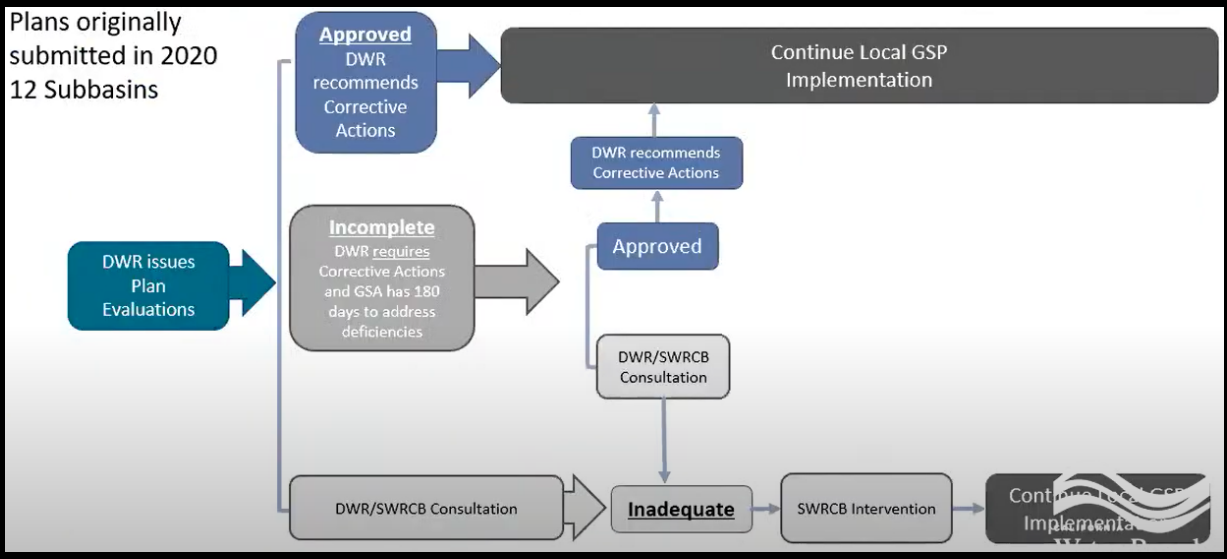


Statewide Groundwater Basin Prioritization Summary

Basin ranking	Basin count per rank	Percent of total for State	
		GW use	Overlying population
High	43	69%	47%
Medium	84	27%	41%
Low	27	3%	1%
Very Low	361	1%	11%
Totals	515	100%	100%

Basin Prioritization results — June 2, 2014

GW Sustainable Plans (GSP) - Process



SGMA Update (2013)

APPROVED:

- Eastern San Joaquin Subbasin
- Merced Subbasin
- Westside Subbasin
- Paso Robles Subbasin
- Cuyama Subbasin
- Kings Subbasin*

*Multi-GSP Subbasin

Approved Plan Determinations

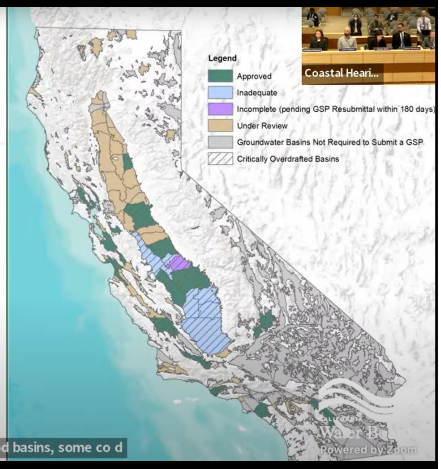
18 Basins

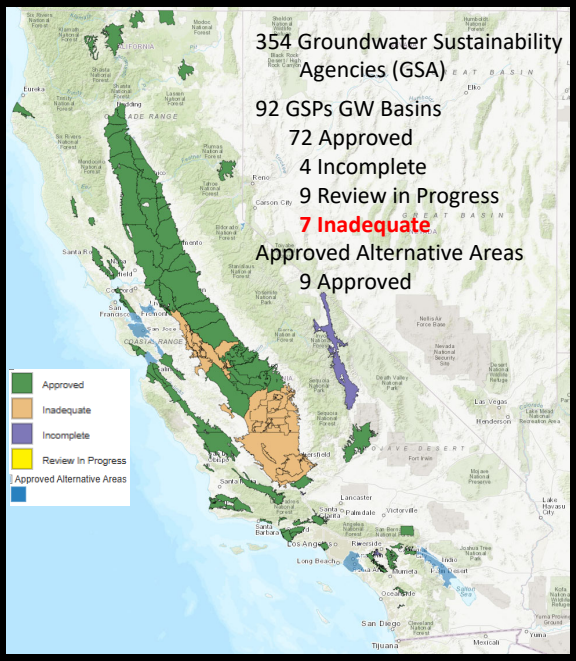
Approved Basins:

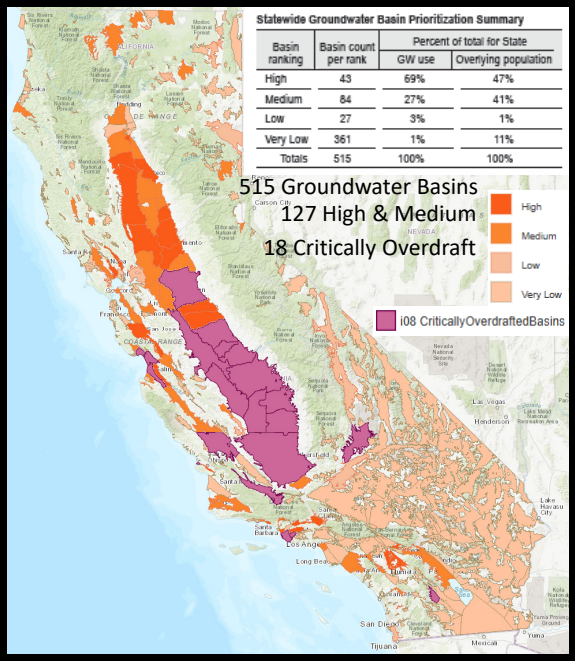
1. Santa Cruz Mid-County Basin
2. 180/400 Foot Aquifer Subbasin
3. North Yuba Subbasin
4. South Yuba Subbasin
5. Oxnard Basin
6. Pleasant Valley Subbasin
7. Las Posas Basin
8. Indian Wells Valley Basin
9. Sonoma Valley Subbasin
10. Petaluma Valley Basin
11. Napa Valley Subbasin
12. Santa Rosa Plains Subbasin
13. Eastern San Joaquin Subbasin
14. Merced Subbasin
15. Paso Robles Subbasin
16. Cuyama Basin
17. Westside Subbasin
18. Kings Subbasin*

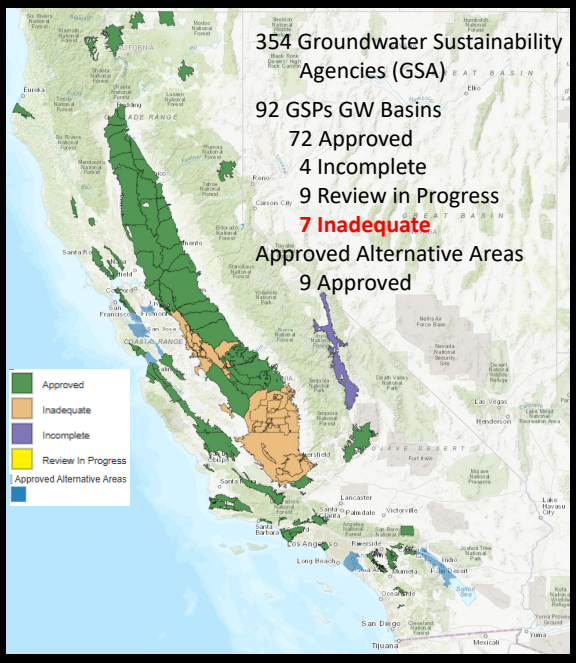
*Multi-Plan Basin

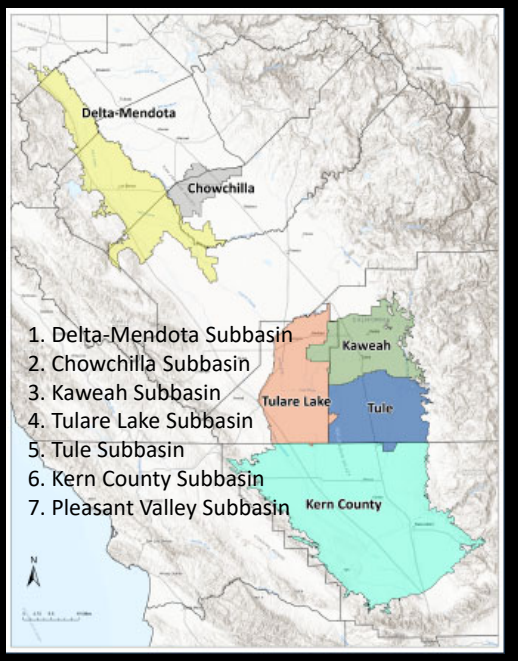
Some non cod basins, some co d



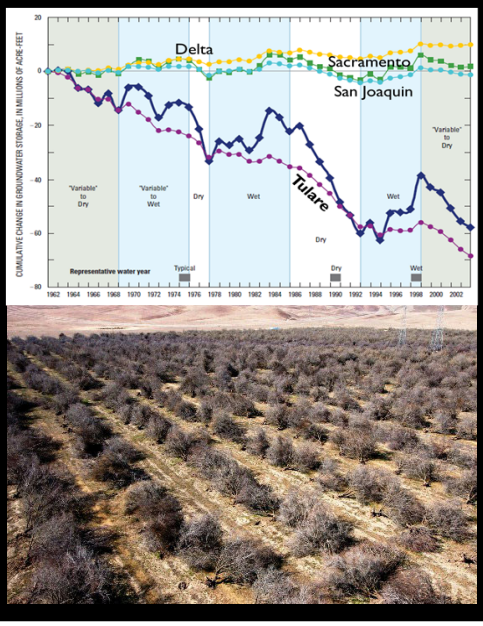


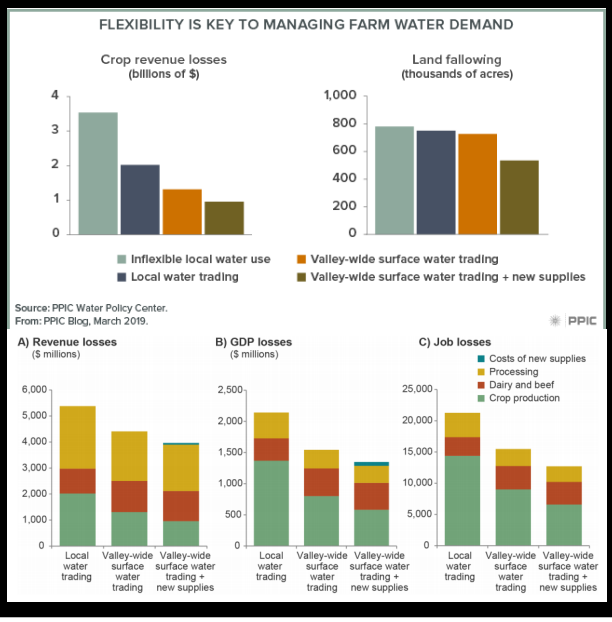




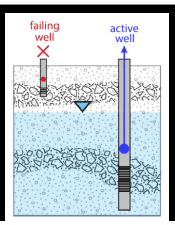


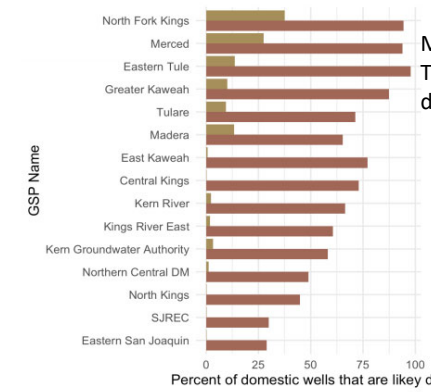
SGMA – Land Retirement





Unsustainable





MT- min. threshold
TCD – Tot. Completed depth

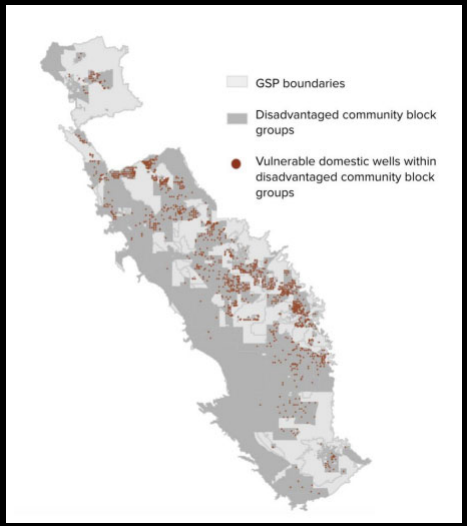
Figure 9. Percent of domestic wells with pump locations and total completed depths above the minimum threshold surface in GSPs with 95% of the domestic well population.

GSP Name	Total Completed Depth			Pump Location		
	Count of Well Failure (#)	Average Well Failure (%)	Range of People Affected (#)	Count of Well Failure (#)	Average Well Failure (%)	Range of People Affected (#)
Chowchilla	11	12%	22 - 132	75	81%	225 - 900
Mid-Kaweah	6	6%	18 - 72	95	98%	285 - 1,140
Kern Groundwater Authority	6	3%	18 - 72	104	58%	312 - 1,248
East Kaweah	1	1%	3 - 12	118	77%	354 - 1,416
SJREC	1	0%	3 - 12	121	30%	363 - 1,452
Eastern Tule	18	14%	54 - 216	129	98%	387 - 1,548
North Fork Kings	54	38%	162 - 648	136	94%	408 - 1,632
Northern Central DM	4	1%	12 - 48	173	49%	519 - 2,076
Tulare	34	9%	102 - 148	256	71%	768 - 3,072
Kings River East	9	2%	27 - 108	289	61%	867 - 3,468
Central Kings	1	0%	3 - 12	293	73%	879 - 3,516
Greater Kaweah	37	10%	111 - 444	317	87%	951 - 3,804
Eastern San Joaquin	2	0%	6 - 24	436	29%	1,308 - 5,232
North Kings	3	0%	9 - 36	470	45%	1,410 - 5,640
Madera	143	13%	429 - 1716	702	65%	2,106 - 8,424
Merced	415	27%	1,245 - 4,980	1421	94%	4,263 - 17,052
Total	765	12%	2,295 - 9,180	5,416	66%	16,248 - 64,992

*Table 3. Number of wells and people vulnerable to MTs **by total completed depth and pump location**. Average Well Failure Percent represents the percent of domestic wells within each GSP that are vulnerable. *Shown are GSPs with 95% of the domestic well population. Total includes all SJV GSPs.*

Sustainable for Whom? The Impact of Groundwater Sustainability Plans on Domestic Wells. Darcy Bostic, Kristin Dobbin, Rich Pauloo, Jessica Mendoza, Michael Kuo, and Jonathan London. https://pacinst.org/publication/sustainable-for-whom/

Unsustainable



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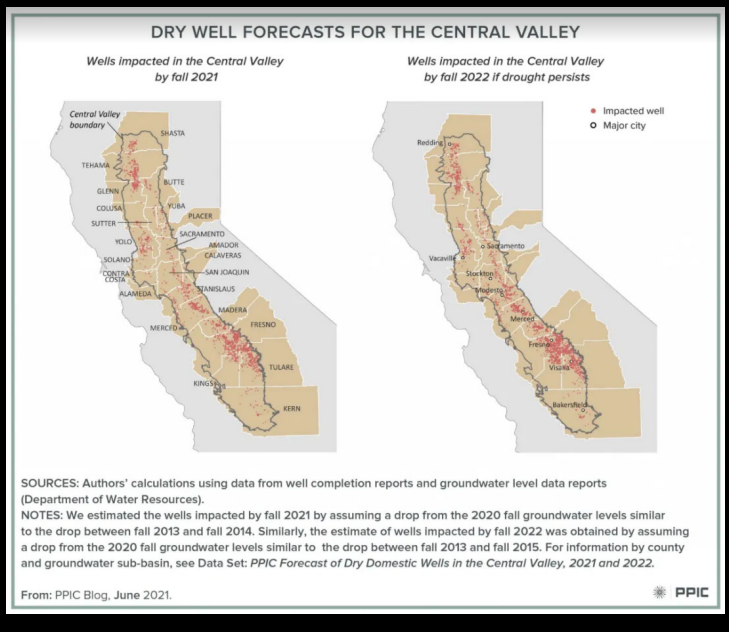
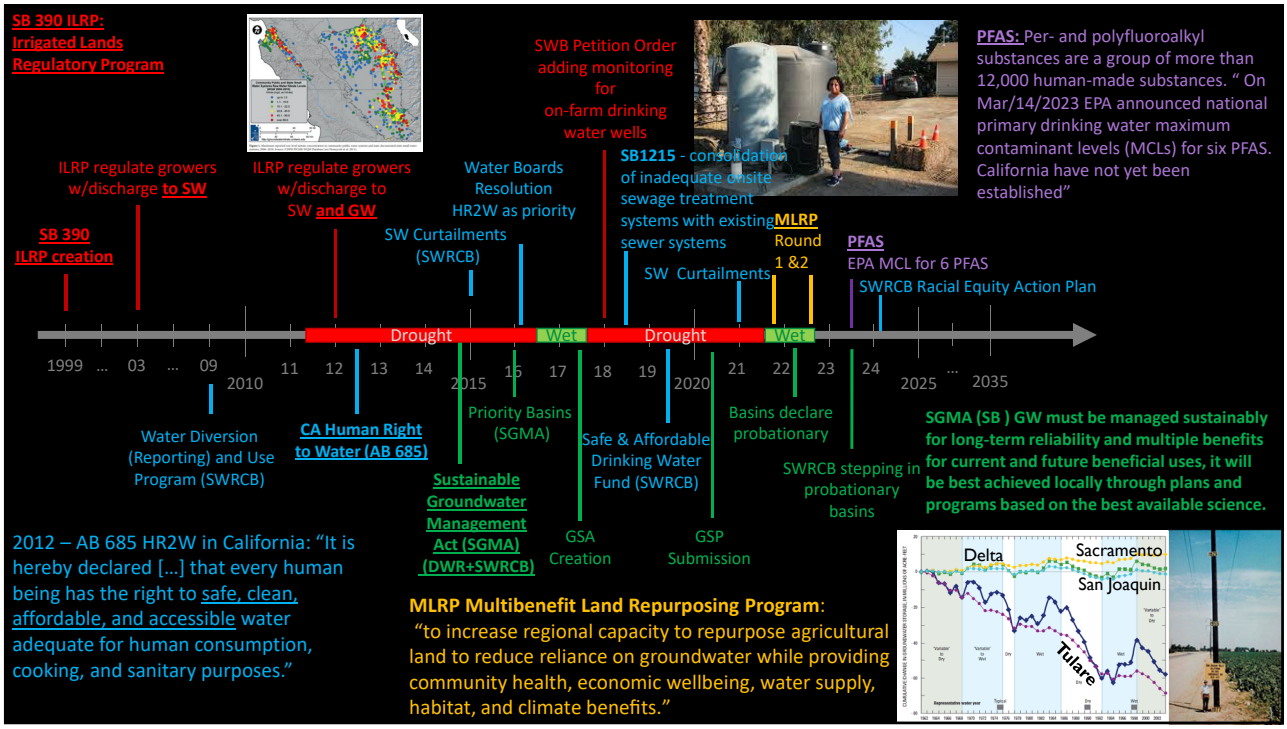
Pauloo, R.A., Escriva-Bou, A., Dahlke, H., Fencl, A., Guillon, H., and Fogg, G.E. (2020). Domestic well vulnerability to drought duration and unsustainable groundwater management in California Central Valley. Environmental Research Letters. https://doi.org/10.1088/1748-9326/ab6f10

People Without Drinking Water Access

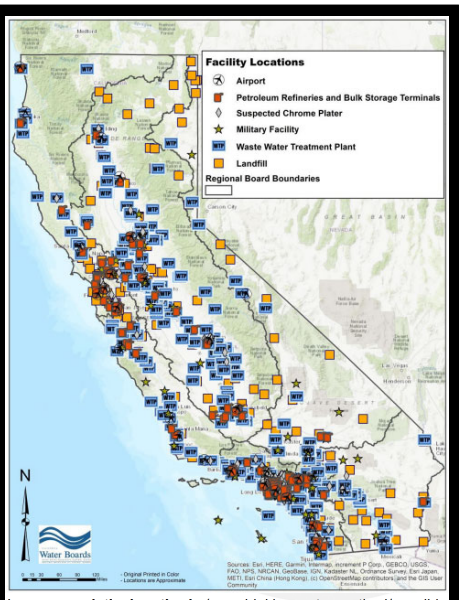




PFAS – Forever Chemicals

WELL -> (a) education, (b) awareness of funding opportunities (SAFER)

- EPA proposed National Primary Drinking Water Regulations to establish MCLs for six PFAS substances
- PFAS General Order (DW-2022-0001-DDW)
- Impact on Recycled Water



Improve **analytical methods** (non-drinking water method/possible expansion of drinking water target list) (late 2022 to 2024)

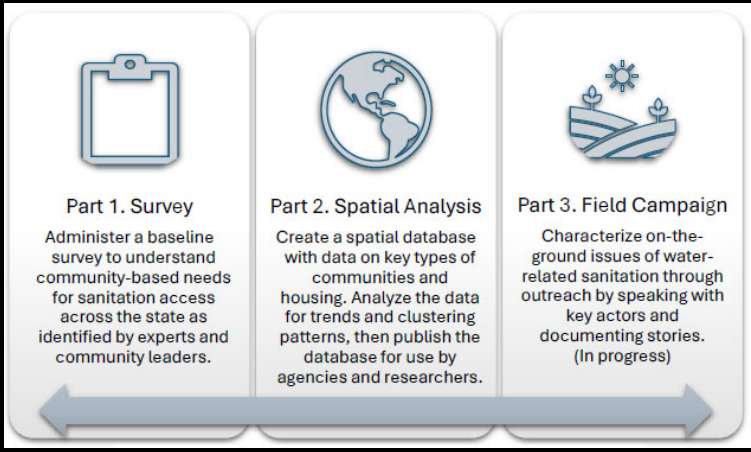
Designate PFOA and PFOS as **CERCLA hazardous substances** (proposed rulemaking – 2022; final 2023)

Conduct **UCMR 5 PFAS sampling** in California's public and small water systems (2023-2025)

Waste Water Access

2023 – Wastewater Needs Assessment
2016 – **SB685** SWRCB resolution that HR2W as a priority
2018 - **SB1215** - consolidation of inadequate onsite sewage treatment systems with existing sewer systems
2019 – SAFER (Safe and Affordable Funds for Equity and Resilience)

Waste Water Needs Assessment



*"**Sanitation** is the access to safe, functional, affordable, and dignified collection and disposal of wastewater from human uses, including adequate sanitation systems, practices, and wastewater treatment to protect public health and the environment."*

*"**Sanitation equity** is achieved when social, geographic, economic, cultural, and demographic attributes no longer predict people's access to or quality of sanitation."*

Waste Water Needs Survey

Six major components of survey:

1. Introduction
2. Definitions of water-related sanitation and equity
3. Characterization of the communities
4. Selection and characterization of problems related to:
   - Access to sanitation
   - Access to sanitary plumbing,
   - Non-functioning sanitary plumbing,
   - Access and use of portable toilets,
   - Sewage systems,
   - Access to running water.

   * Identified: size, temporality, persistence, impacts and exposure of risks to the population.
5. Community or government actions to solve the problems
6. References and closure.

LONG LASTING ISSUES

Most respondents (79%) noted that water-related sanitation issues are over than 10 years ago.

"*Many (residents) are paying for sewer and it doesn't come, doesn't come, the sewer it's coming at turtle speed*" – Region 5 Central Coast
"Muchos (residentes) están pagando y el drenaje no llega, no llega, viene en tortuga"
From the 30 communities visited 30 (100%) have mentioned that they been experiencing sanitation issues 10 years or longer

HOUSING TYPES

Most water-related sanitation issues (44%) occur in family residences [single (32%) or multi-family (12%)], followed by Recreational Vehicles (15%) and mobile home parks (15%).

"We need help, but we don't have access to the funds, and having access (to funds) take many years and meanwhile the people are struggling" – Region 5 Central Coast

SOCIODEMOGRAPHIC FACTORS

Respondents indicated that water-related sanitation issues impact non-Hispanic white (34%), Latino (28%), and mixed (18%) communities.

"You figure out 2 answer, but then you have 6 more questions" – Region 5 Central Valley

COMMUNITIES

Most respondents (84%) mentioned that water-related sanitation issues primarily occur in communities that meet statewide criteria as disadvantaged.

"A lot of small communities and community members need to step up. They want the change, but don't want to be the change-agent" – Region 5 Central Valley

COMMON ISSUES

Respondents noted the most common sanitation issue is reliance on septic systems (38%), no or intermittent water supply at home for water-related sanitation (13%), and reliance on mobile toilets (12%).

"I bought a house and later realized I was on a septic tank system" – Region 5 Central Valley

COMMON ISSUES

Respondents noted the most common sanitation issue is reliance on septic systems (38%), no or intermittent water supply at home for water-related sanitation (13%), and reliance on mobile toilets (12%).

"You can spot septic tanks in summer because that's were the grass is green" – Region 5 Central Valley

SEPTIC SYSTEMS

Lack of maintenance (67%) is the most frequently reported cause of septic system issues

"My insurance will not cover another backup flow incident" – Region 5 Central Valley

LACK OF WATER ACCESS

Respondents indicated that some communities have "no or intermittent" water supply at home, especially in unhoused encampments.

"Once we get water and sewer people will clean their houses and properties, and it will become a good neighborhood" – Region 7 Colorado River

MISMANAGEMENT

Few respondents know of locations where raw sewage is spilling into water bodies or land. When reported, this occurred at private family residences (80%).

"Some of my neighbors discharge their shower water to their garden" – Region 5 Central Valley

NO INDOOR SANITATION PLUMBING

Respondents indicated that this issue is experienced primarily in communities facing homelessness and housing insecurity.

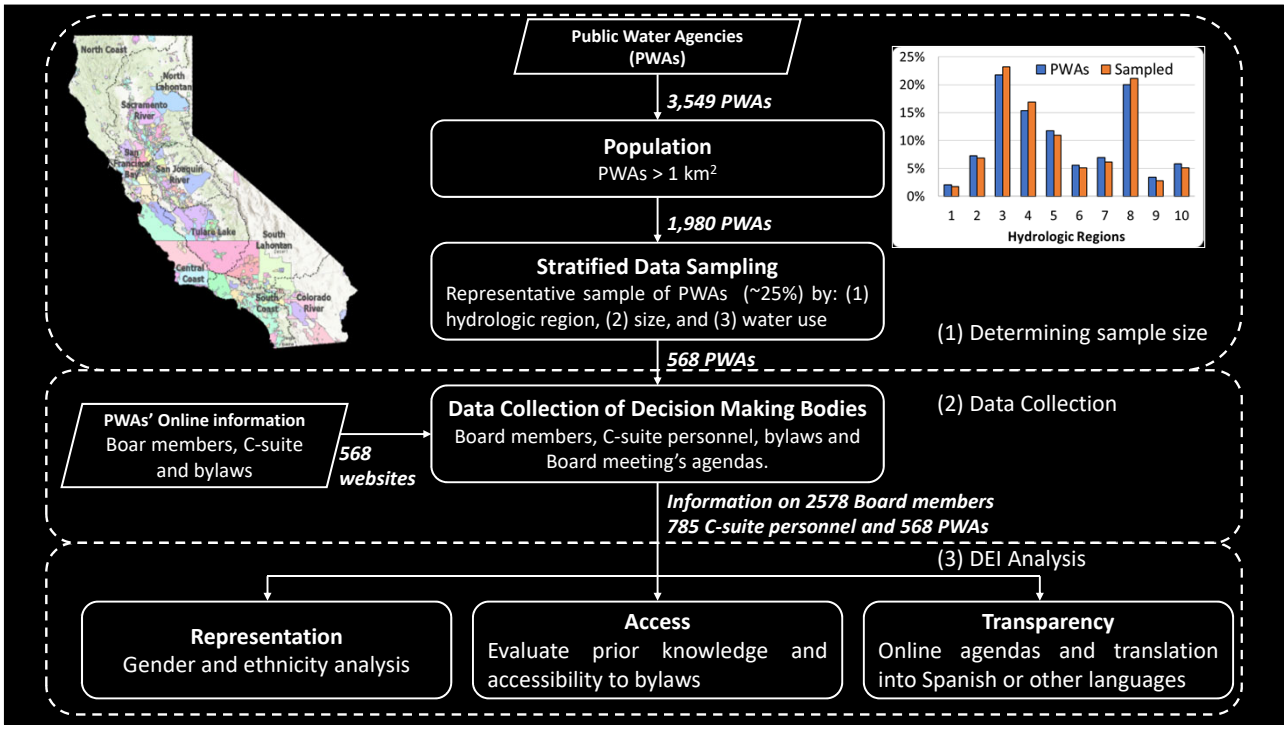
"We have seen the unhoused population increasing in the last five years " – Region 7 Colorado River

ENVIRONMENTAL AND PUBLIC HEALTH

Residents are showing illness symptoms due to malfunctioning septic systems (10%), use of mobile home toilets (11%), and when indoor systems are not usable or not functioning (50%).

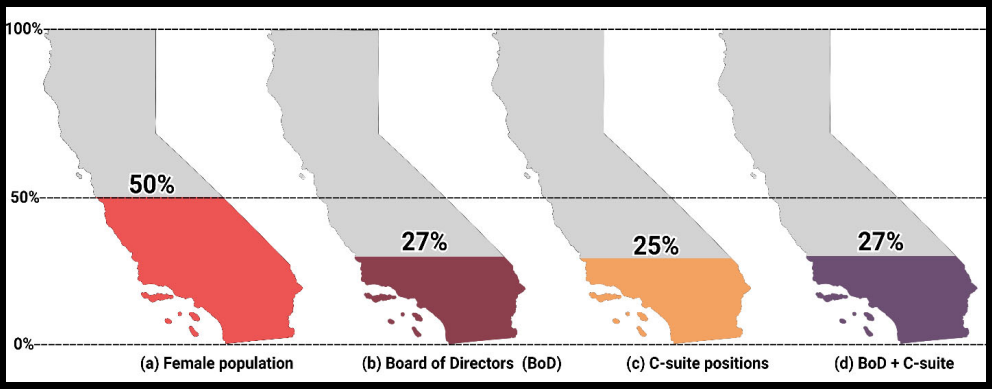
People that we have interviewed (Region 5 – CV & Region 7 Colorado) have mentioned they are showing/suffering illness symptoms

Political Justice



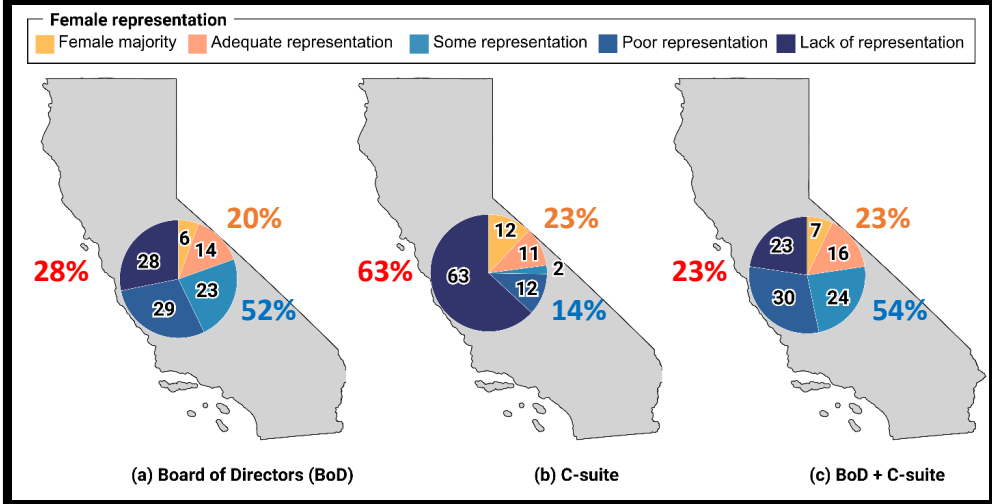
Representation by Gender

To achieve proportional representation, the number of women board members would need to double



	Sampled	Female	% Female
Board of Directors (BoD)	2578	701	27%
C-suite positions	785	200	25%
BoD + C-suite	3363	901	27%

Representation by Gender



50% or more women
1% to 49% of women
No women at all (0%)

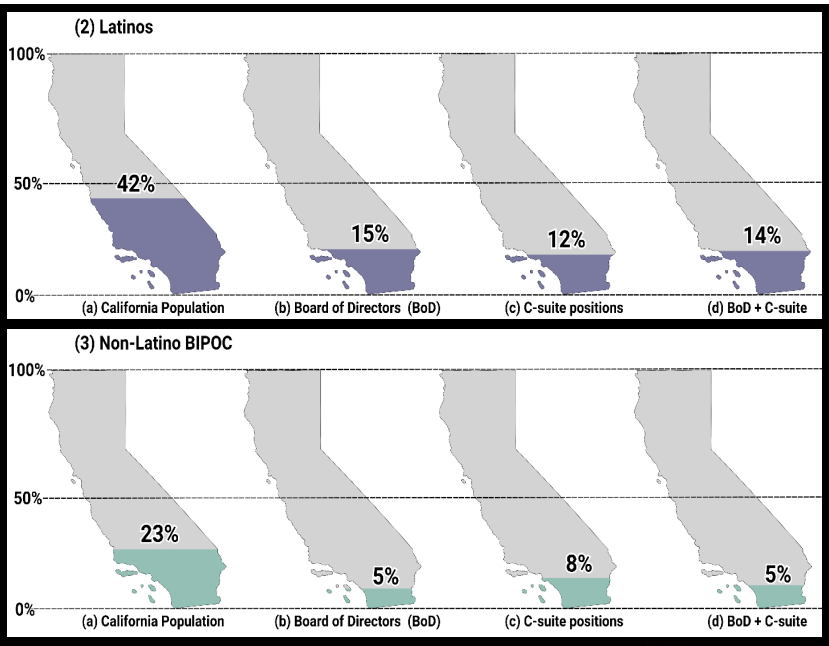
"in 23% of the PWAs sampled, there are no women represented at all"

"in 63% of the PWAs sampled, there are no women represented in C-suite positions"

Representation by ethnicity

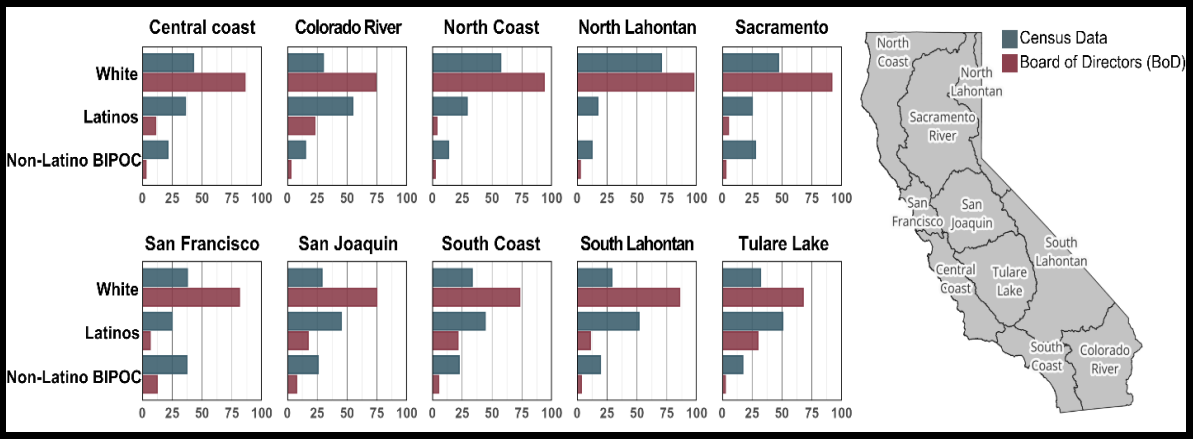
"To achieve proportional representation, the number of Latinos and BIPOC board members would need to triple and quadruple"

"To achieve proportional C-suite representation, Latinos and Non-Latino BIPOC would need to triple theirs. "



Representation by Ethnicity

Board Members



"even in regions where Latinos or BIPOC are the majority of the population, they are drastically under represented"

Most importantly …

"People don't care how much you know … people wanna know how much you care"

samsandoval@ucdavis.edu watermanagement.ucdavis.edu