

Small Water Supplier & Rural Community Drought & Water Shortage Planning

IMPLEMENTATION OF 2018 LEGISLATION ON WATER CONSERVATION AND
DROUGHT PLANNING

(AB 1668)

Nirmala Benin & Julia Ekstrom
California Department of Water Resources

Make Water
Conservation
a California
Way of Life
(AB 1668
and SB 606)

Urban Water Use Efficiency

- Urban water use objectives (targets) based on efficiency standards
- Commercial, industrial, and institutional (CII) performance measures

Drought Resiliency

- Water shortage contingency planning
- **County drought planning for small suppliers and rural communities**

Agricultural Water Use Efficiency

- Enhanced Agricultural Water Management Planning

Agency Coordination, Public Outreach and Stakeholder Engagement

- SB 606 and AB 1668 include many specifications on agency coordination, public outreach and stakeholder engagement during implementation.
 - Five-Agency Coordination Team (ACT)
 - Topic-specific stakeholder and advisory groups
 - Urban Workgroups
 - AAG (Agricultural Advisory Group)
 - **CDAG (Countywide Drought Advisory Group)**
 - Public workshops and meetings
 - Project websites and data portals

Sign up to our Listserv by emailing us at WUE@water.ca.gov

Actions

CDAG will inform and advise DWR and the state agencies as they implement 2 actions:

- 1) identify small suppliers and rural communities at risk of drought and water shortage vulnerability
- 2) develop recommendations to the Governor and Legislature for improving drought contingency planning for those areas.

Legislation Paragraph 3

The guidance from the department shall outline goals of the countywide drought and water shortage contingency plans and recommend components including, but not limited to, all of the following:

- (1) Assessment of drought vulnerability.
- (2) Actions to reduce drought vulnerability.
- (3) Response, financing, and local communication and outreach planning efforts that may be implemented in times of drought.
- (4) Data needs and reporting.
- (5) Roles and responsibilities of interested parties and coordination with other relevant water management planning efforts.

Small Water Supplier & Rural Community Drought & Water Shortage Planning Project Team Members



Nirmala Benin, DWR



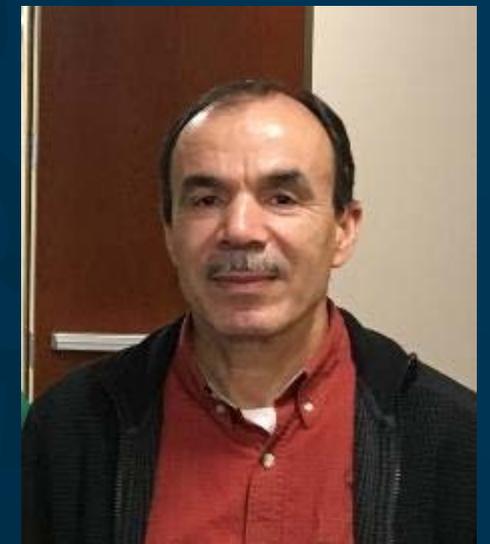
Betsy Lichti, SWRCB



Julia Ekstrom, DWR



Kathy Frevert, SWRCB



Fethi Benjemaa, DWR



Jose Alarcon, DWR



Michelle Frederick, SWRCB



James Campagna, DWR



Joseph Crisologo, SWRCB



Carolina Balazs, OEHHA

CDAG stakeholders

Academia	Stanford University, California Water Institute at Fresno State, UC Berkeley Wheeler Water Institute at the Center for Law, Energy & the Environment
Consultant	EKI Environment & Water, Inc., Offices of John S. Mills, Watershed Progressive
County	San Luis Obispo, Napa, Lake Tulare County Resource Management Agency Rural County Reps of California (RCRC) California State Association of Counties Calaveras County Water District El Dorado County Water Agency
Tribes	La Posta Tribe Tule River Indian Tribe of California Indian Health Services Morongo Band of Mission Indians Pechanga Tribal Government

CDAG stakeholders continued

NGO

Pacific Institute

Small
Community
Assistance

California Rural Water Association
Community Water Center
Rural Community Assistance Corp
Self-Help Enterprises

Local agency

California Association of Local Agency Formation Commissions
Local Government Commission

Water Agency

California Water Association
Santa Clara Valley Water District
California Association of Mutual Water Companies
California Municipal Utilities Association
Mojave Water Agency
San Bernardino Valley Water District

Environmental Justice
Justice

Environmental Justice Coalition for Water

CDAG Workgroups

CDAG **Technical** **Workgroup**

CDAG will inform and advise DWR and the state agencies as they implement 2 actions:

1) identify small suppliers and rural communities at risk of drought and water shortage vulnerability

CDAG **WSCP** **Workgroup**

2) develop recommendations and guidance to the Governor and Legislature relating to the development and implementation of countywide drought and water shortage contingency plans (WSCPs) for improving drought contingency planning for those areas.

Project Timeline

By Jan1, 2020:
Deliverables to
Governor's
Office &
Legislature



Legend

* Technical Workgroup meetings (Deliverable 1)

* WSCP Workgroup meetings (Deliverable 2)

Literature Review Report

County Drought Advisory Group
Project: Small Water Supplier and Rural Community Drought Risk and Water
Shortage Planning

Literature Review

February 2019



Water Use and Efficiency Branch
California Department of Water Resources

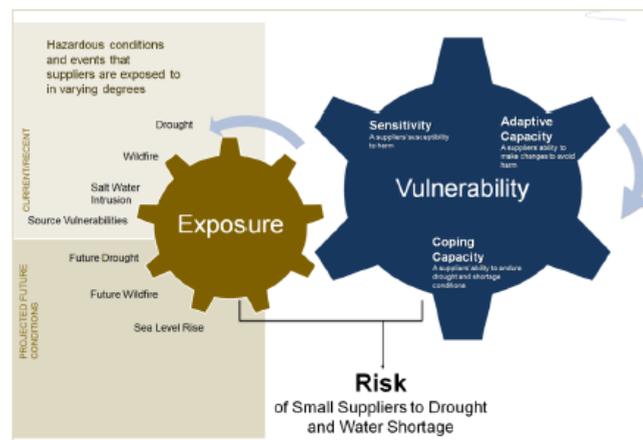
Deliverable 1

Drought and Water Shortage Risk Scoring California's Small Water Suppliers and Self-Supplied Communities

Draft Prepared for CDAG process as partial fulfillment of AB 1668

Prepared by Department of Water Resources 2019

Document for Review -J. Ekstrom Draft June 17, 2019



Deliverable 2

Water Shortage Contingency Planning for Small Water Suppliers & Rural Communities

DRAFT PROPOSAL FOR REVIEW BY DWR COUNTY DROUGHT
ADVISORY GROUP, JUNE 24, 2019

Please review and send comments **by Wednesday, July 3, 2019** to
Nirmala.Benin@water.ca.gov.

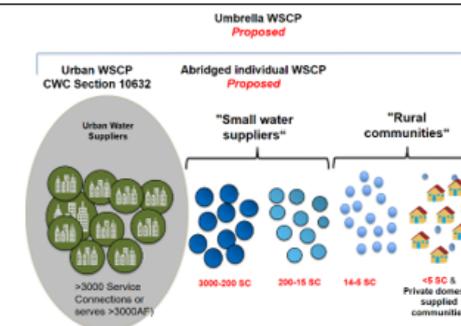
Misc notes for reviewers to address:

Are there general recommendations that need to be added?

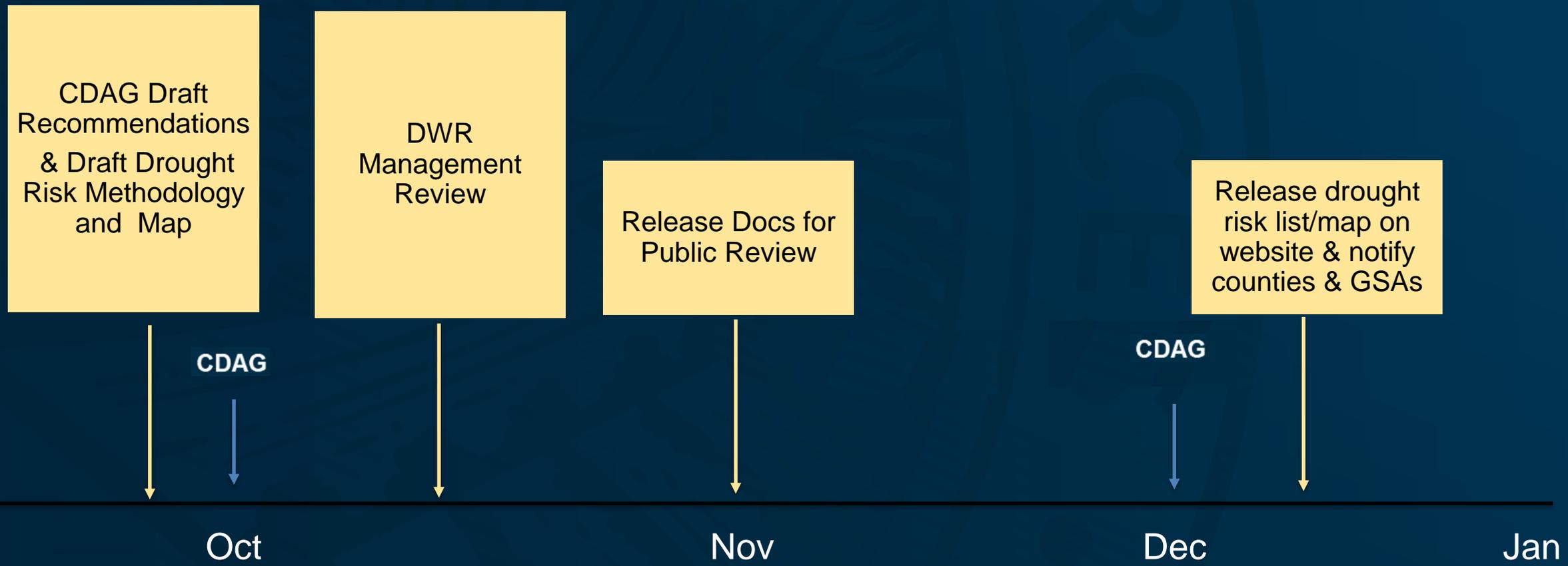
Umbrella Plan: Are there specific recommendations to be added to Section 2 or additional components that need to be added to Appendix B?

Small Water Supplier Plan: Are there specific recommendations to be added to Section 3 or additional components not covered by existing tools/templates/data collection efforts that need to be added to Appendix C?

Please note: This is not the draft of the final report to the legislature.



Project Timeline: 2019



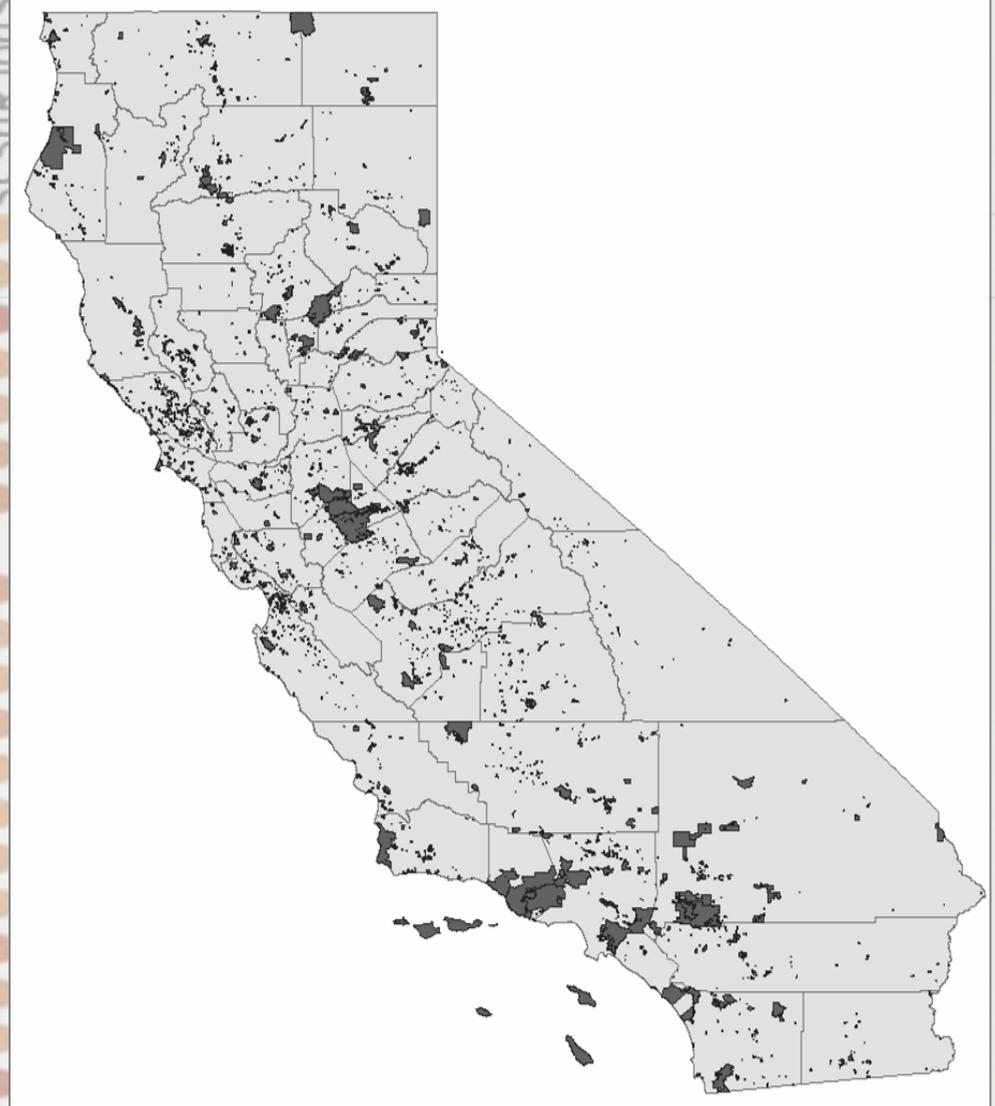
By Jan1, 2020:
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PROJECT DELIVERABLE #1: WHO IS AT RISK?



Stakeholder Process



B EXPOSURE ①

We are considering those who are self-supplied, where there is no true customer relationship.

May be as many as 2 Million people relying on private wells (USGS survey)

Factors:

- well completion depth
- aquifer thickness in re: well loc. (can you go deeper?)
- GW levels overall
- Community economics & demographics
- Location
- Where are the vulnerable populations?

B Susceptibility ①

- Low water production (ie shallow, low-producing wells)
- OLD infrastructure / pump/wells
- Reduction in availability (ie static, drawdown levels fluctuate over time?)
- Vulnerable populations: where are they?
- Poor communication pathways / isolation by geography, technology, other
 - ↳ Especially consider tribal communication paths w/ Counties
 - ↳ and LANGUAGE, other cultural factors

B Susceptibility ②

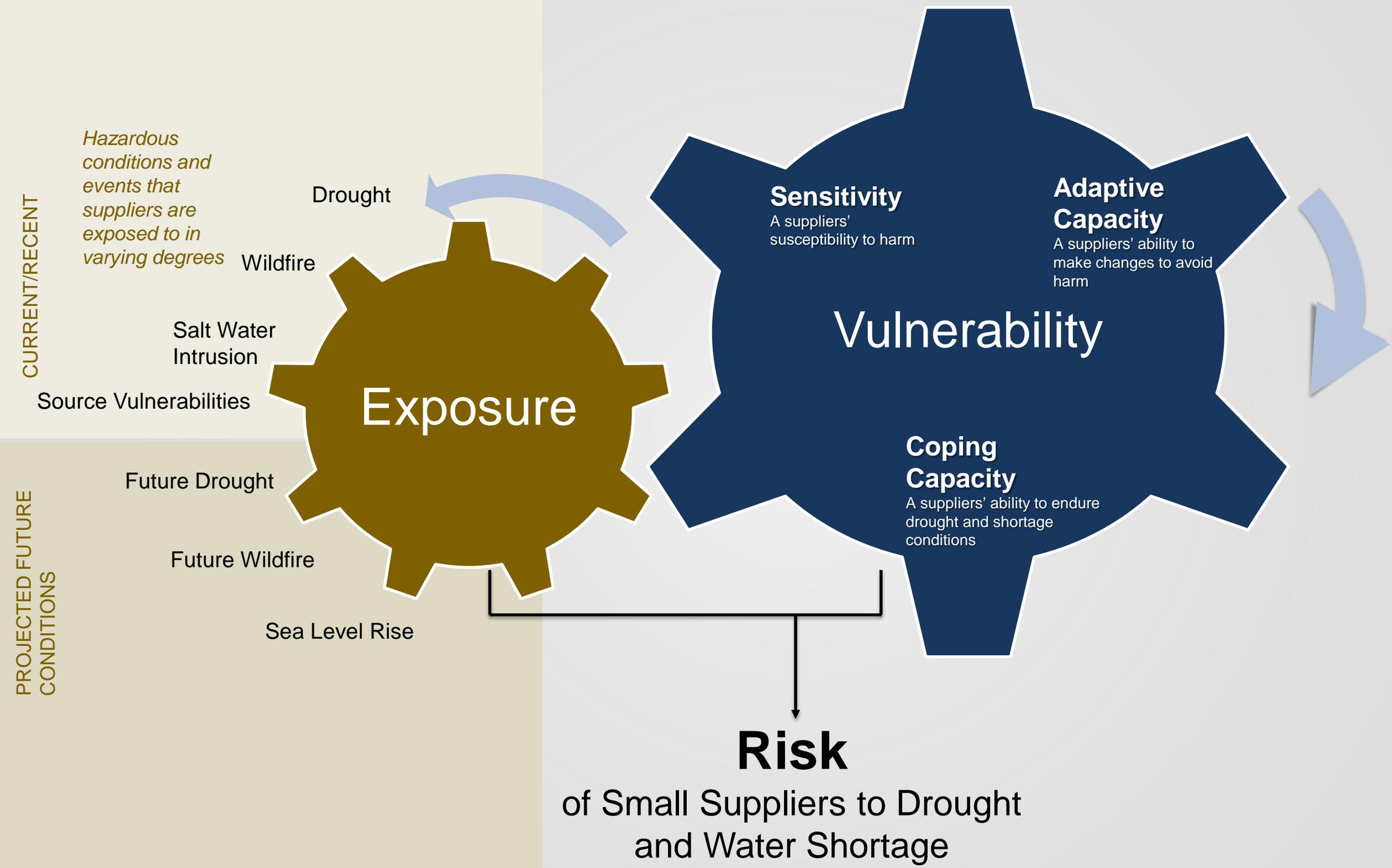
- Use of water: domestic use? growing food? livestock? income generation?
- Owners vs tenancy
 - ability to respond, repair, or just move

B Coping / Adaptive Capacity ①

- Limited ability to reach the population through regulation, outside influence
- Economics & demographics of comm's
- Have/have no drought contingency plan
- Homeowners equipped w/information re: maintenance, response, help, repairs
- Use of meters / awareness of use (helps w/responsiveness)
- Backup / Redundancy of Supply
 - Nature of aquifer/formations - fractured rock vs E&J basins
- Resiliency = more adaptive



Framing of Risk



Risk Framework Components: *Small Water Suppliers*

Exposure to Hazards

Climate Change Projections

- Drought risk under climate change
- Wildfire under climate change
- Sea level rise

Recent Stressors

- Episodic Stressors
 - Dryness
 - Wildfire
- Source Vulnerabilities
 - Population growth
 - Groundwater status
- Source Quality

Vulnerability

Physical Sensitivity

- Supplier Connectivity
- Supplier's Infrastructure
- Portfolio Redundancy
- Physical Coping Capacity
- Current conditions (quality and supply)

Social Adaptive Capacity

- Financial
- Organizational/Institutional
- Staff capacity
- Customer base
- Social capital

One point in time estimate of
Drought & Water Shortage Risk

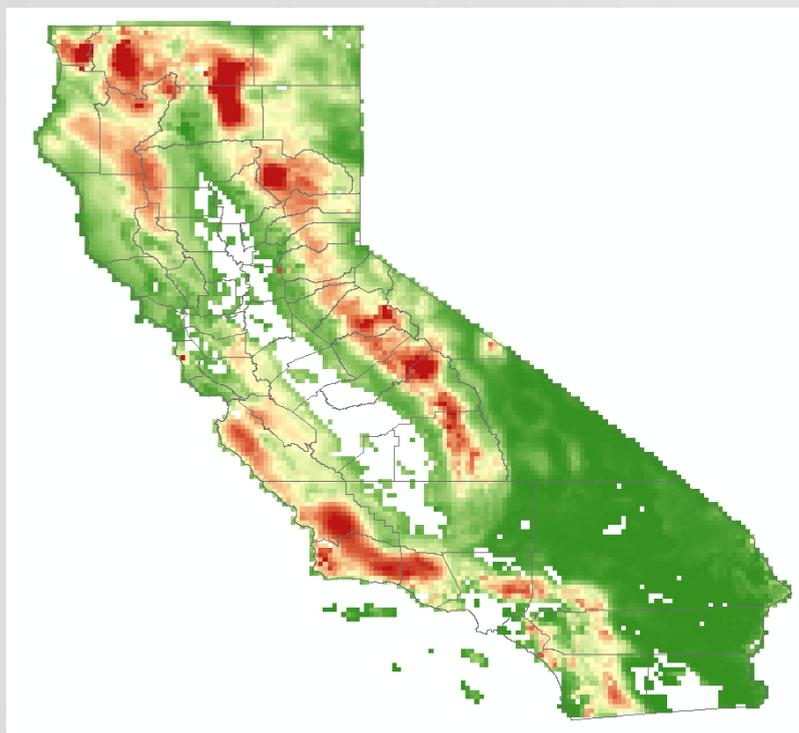


COMPONENT 1: EXPOSURE TO HAZARD -- CLIMATE CHANGE



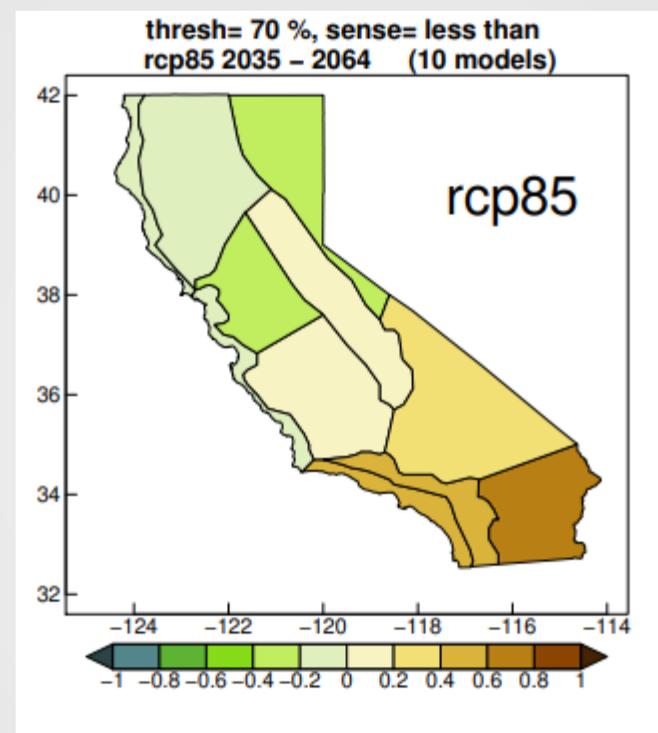
Climate Change (Mid-Century, RCP 8.5)

Wildfire – Acreage Burned



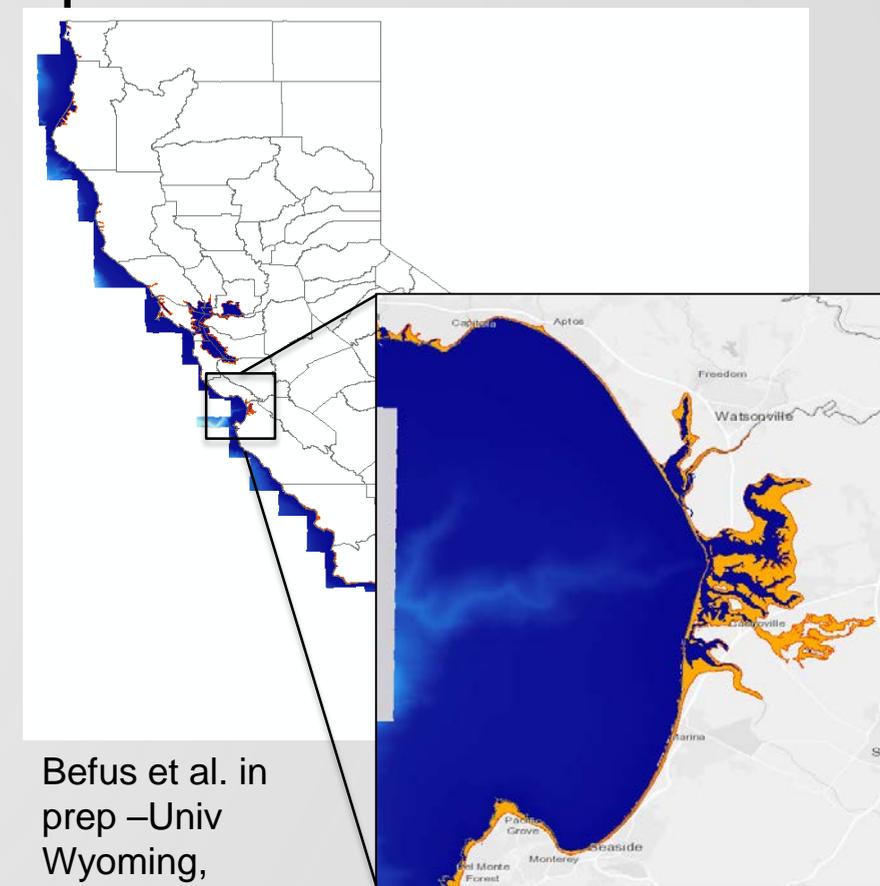
Westerling, UC Merced
10+GCMs, RCP 8.5 midcentury

Seasonal Drought



Pierce, Cayan et al. Scripps
RCP 8.5 midcentury 10+GCMs

Sea Level Rise into Coastal Aquifers



Befus et al. in prep –Univ Wyoming, USGS
Aquifer intrusion from 1m SLR

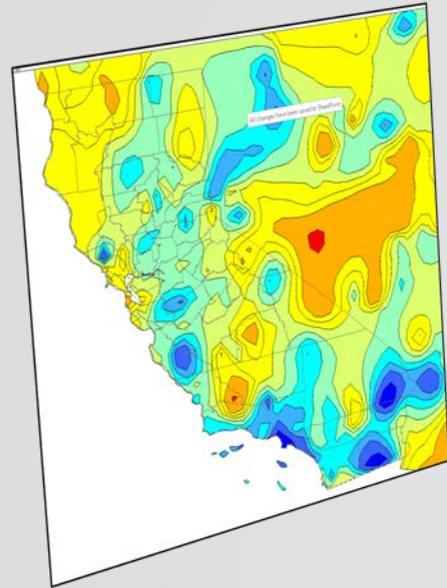


COMPONENT 2: CURRENT/ RECENT HAZARD

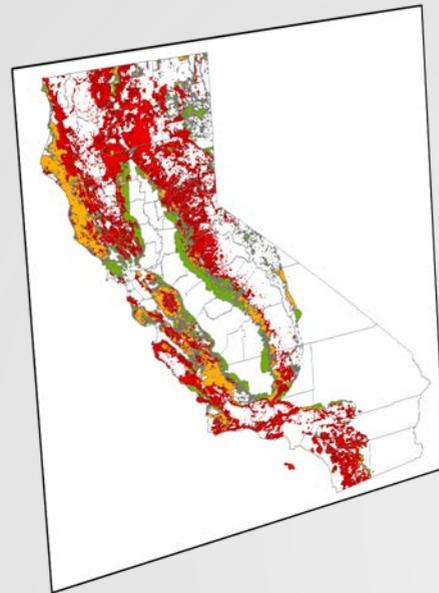


Current/Recent Hazard Conditions

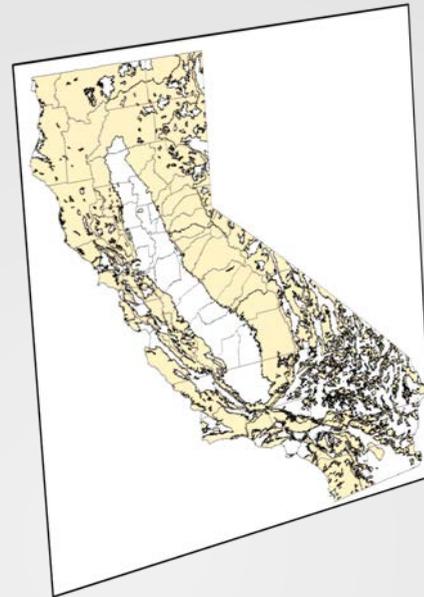
Annual Drought Forecast



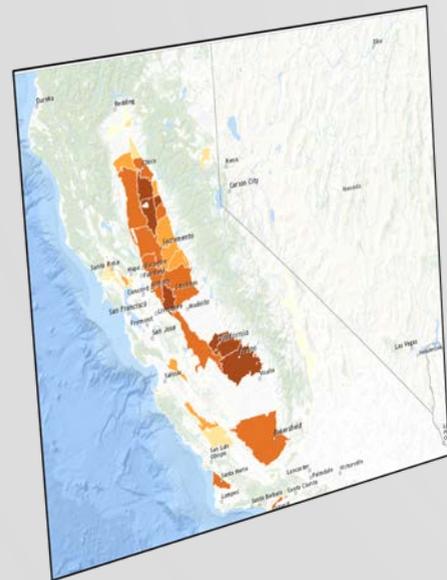
Current Wildfire Risk



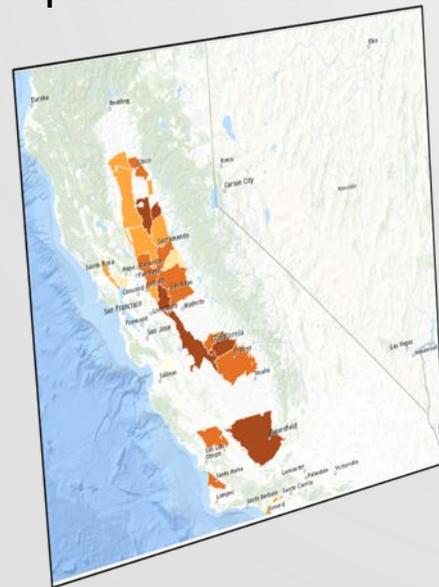
Fractured Rock Areas



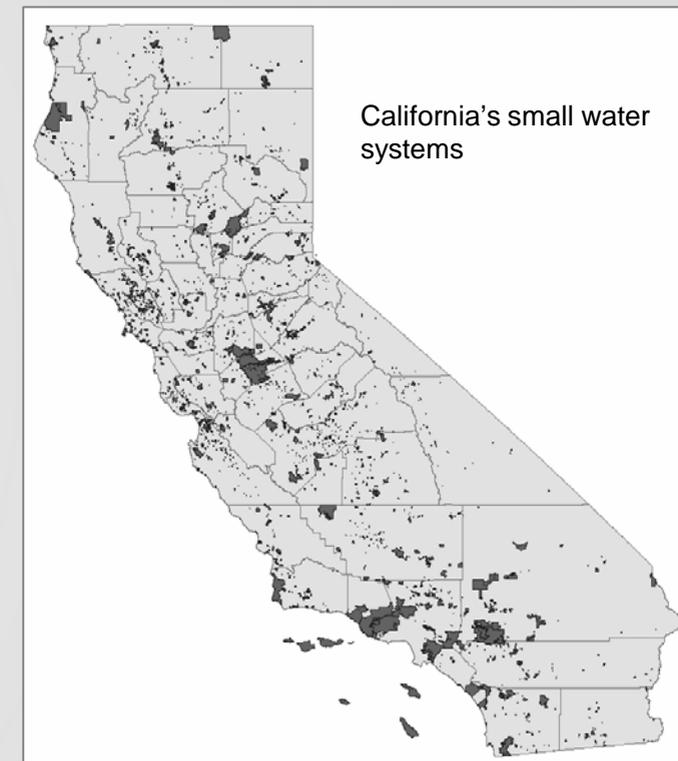
Irrigated Ag



Population Growth



Other
Subsidence areas
Depleted GW
Past WQ problems
Salt



Component 3: SUPPLIER PHYSICAL VULNERABILITY

- Supplier Connectivity
 - # interties
 - # emergency interties
- Supplier's Infrastructure
 - any baseline & level monitoring
 - % Lack of metering
- Portfolio Redundancy
 - # sources (summed)
 - # source types (gw, sw, purchased)
- Physical Coping Capacity
 - #Service Connections
- Current conditions (quality and supply)
 - Distribution problems
 - Reported outages (2011-18)
 - Supply levels (declining, stable, recovering)
 - Water quality problems (pending SWB)



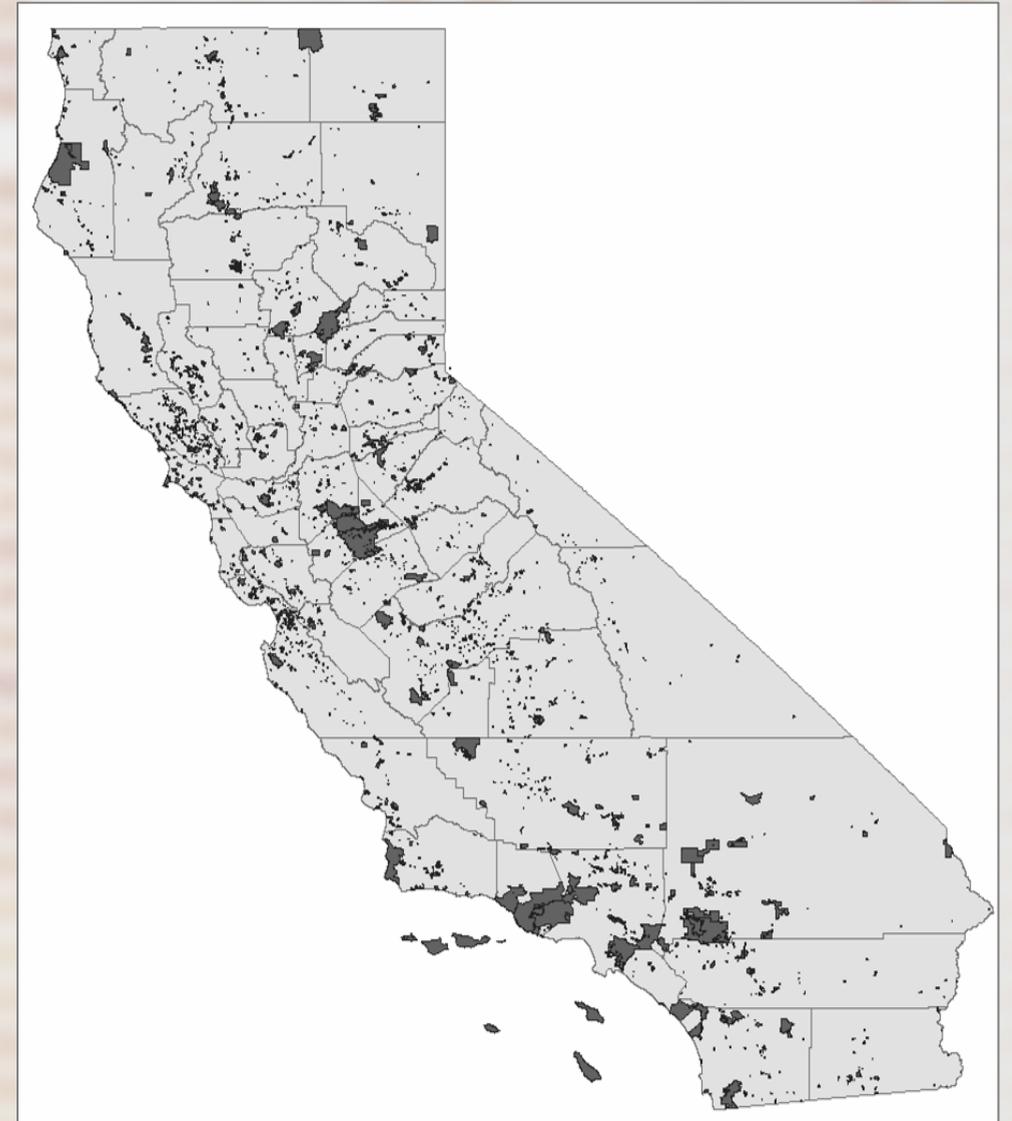
Component 4: SUPPLIER SOCIAL VULNERABILITY

- Financial
 - Years since updated rate structure
 - Type of rate structure
- Organizational/ Institutional
 - Future Groundwater Sustainability Plan
 - Year of drought preparation plan update
- Staff capacity
 - *no data*
- Customer base characteristics
 - Income, race, age, mobile homes, no vehicles, education, single parents, unemployment, living quarters
- Social capital
 - *no statewide data*



Next Steps

- Complete scoring
- Validate
- Management review
- Construct risk profiles
 - For Counties and GSAs
- Public release (per legislation)



Contact Information

To join the combined advisory group listserve
(CDAG and other Urban and Ag WUE projects)

[Email wue@water.ca.gov](mailto:wue@water.ca.gov)

For comments specific to CDAG:

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916-651-9848

