

Groundwater Trading Safeguards for Vulnerable Users Workshop

October 28, 2021, 2:30-5:00 pm
October 29, 2021, 9:30-12:00 pm

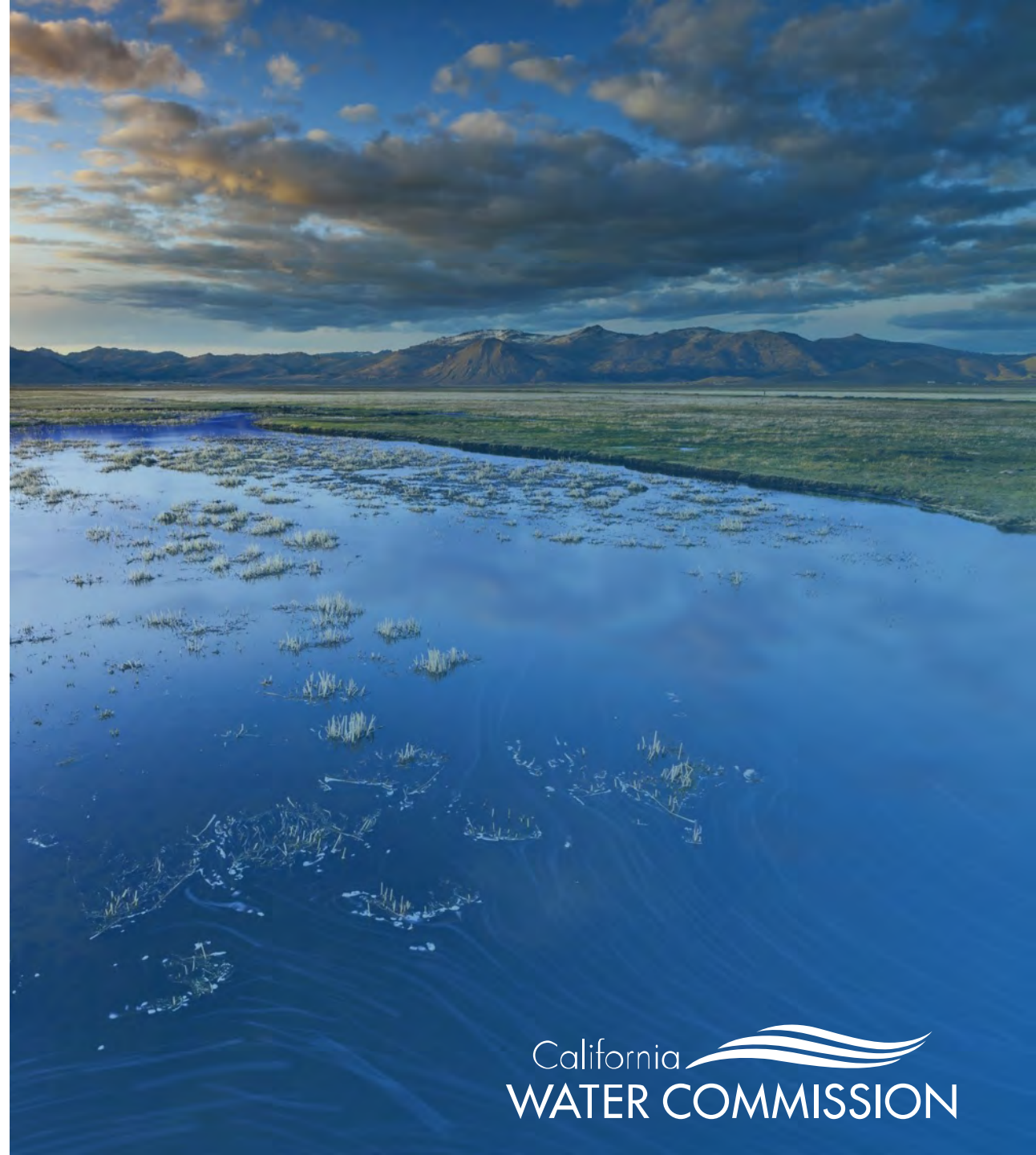


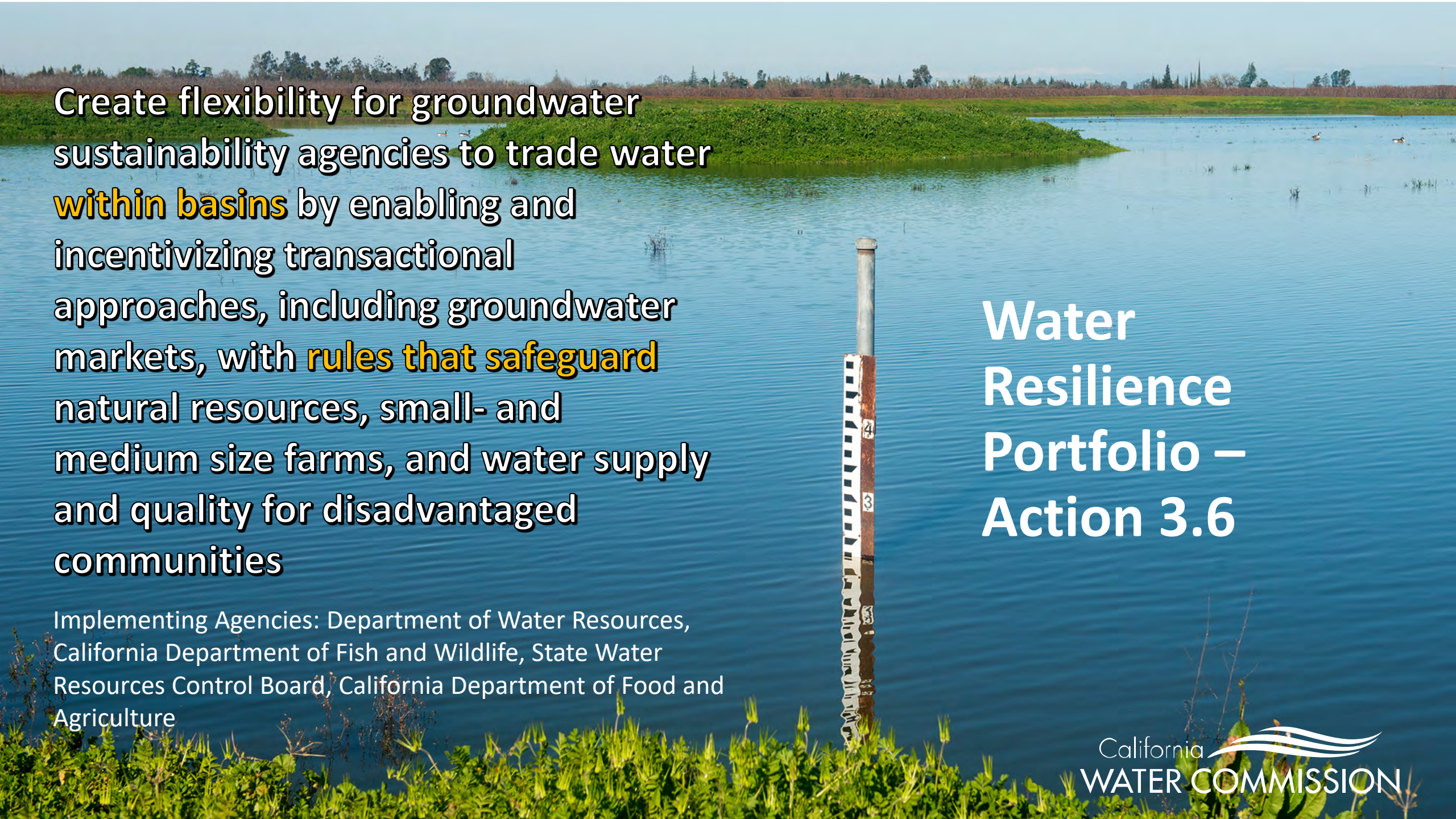
Where are you from?

<https://pollev.com/lisabeutler208>

Agenda

1. Login, Handouts, and Meeting Logistics
2. Welcome and Greetings
3. Panel Discussion
4. Whiteboard Exercise
5. Presentation: Cross-Cutting Themes and Points of Divergence
6. Breakout: Points of Divergence
7. Presentation: The Role of the State
8. Large Group Discussion: The Role of the State
9. Next Steps
10. Closing Remarks
11. Adjourn





Create flexibility for groundwater sustainability agencies 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

Implementing Agencies: Department of Water Resources, California Department of Fish and Wildlife, State Water Resources Control Board, California Department of Food and Agriculture

Water Resilience Portfolio – Action 3.6

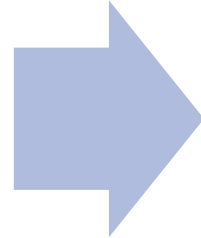
Commission timeline



Frame the Issue

- Expert Panels
- Small Group Conversations

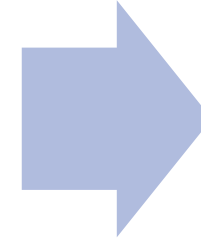
June - September 2021



Hold Public Discussions

- Localized Outreach
- Public Workshops

September - November 2021



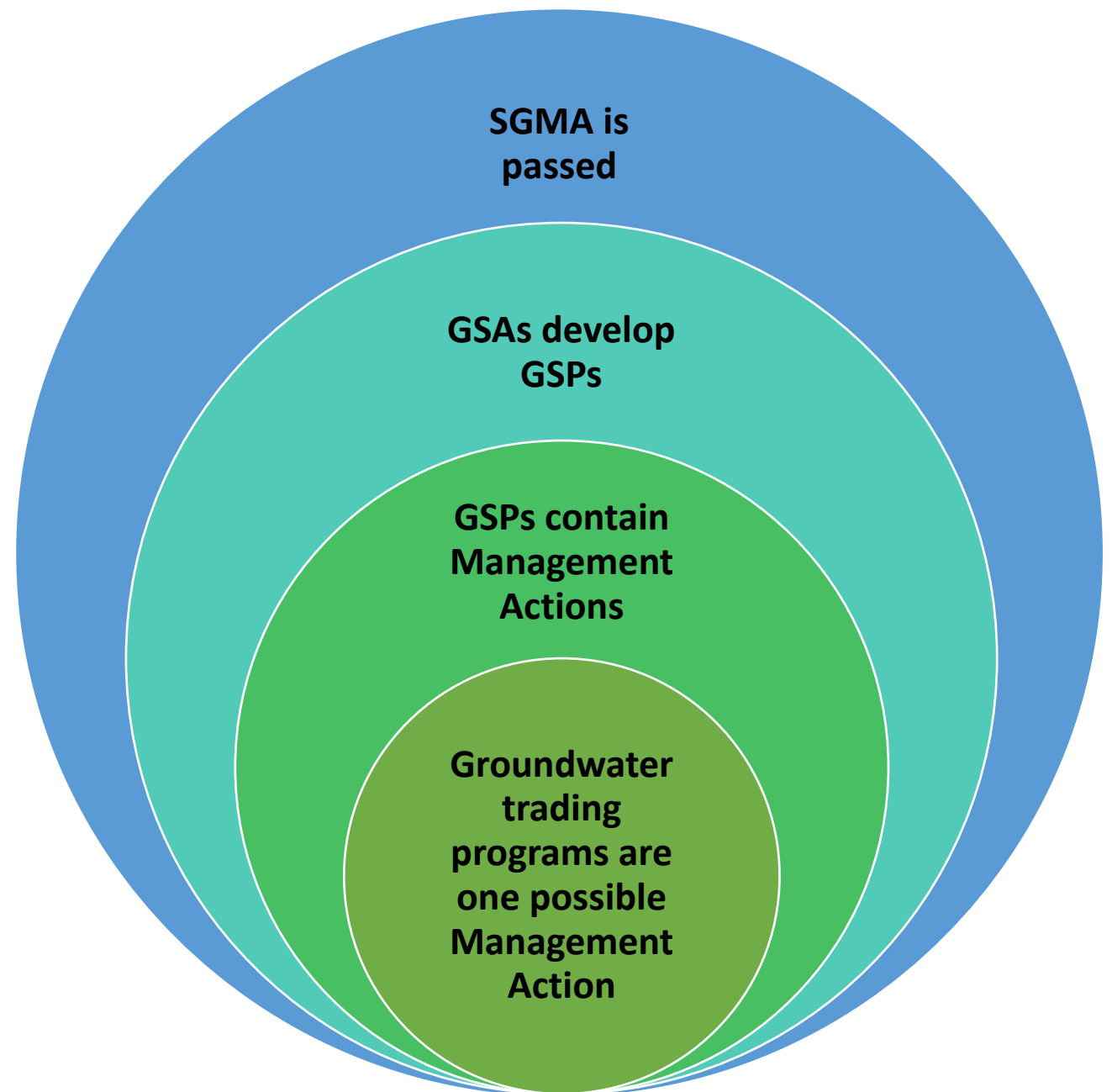
Draft White Paper

- Present Draft
- Present Final

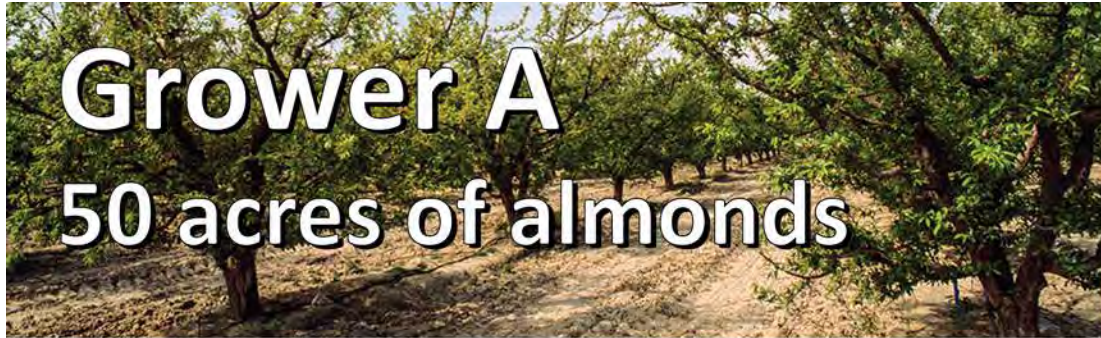
January - March 2022

How is Groundwater Trading Related to SGMA?

- **GSA**s have the authority to allocate and manage groundwater.
- **The state** ensures that GSAs are compliant with SGMA by reviewing GSPs to make sure that they are adequate.



What is Groundwater Trading?



Requires:
150 AF 

Allocation:
50 AF 



Requires:
200 AF 

Allocation:
100 AF 

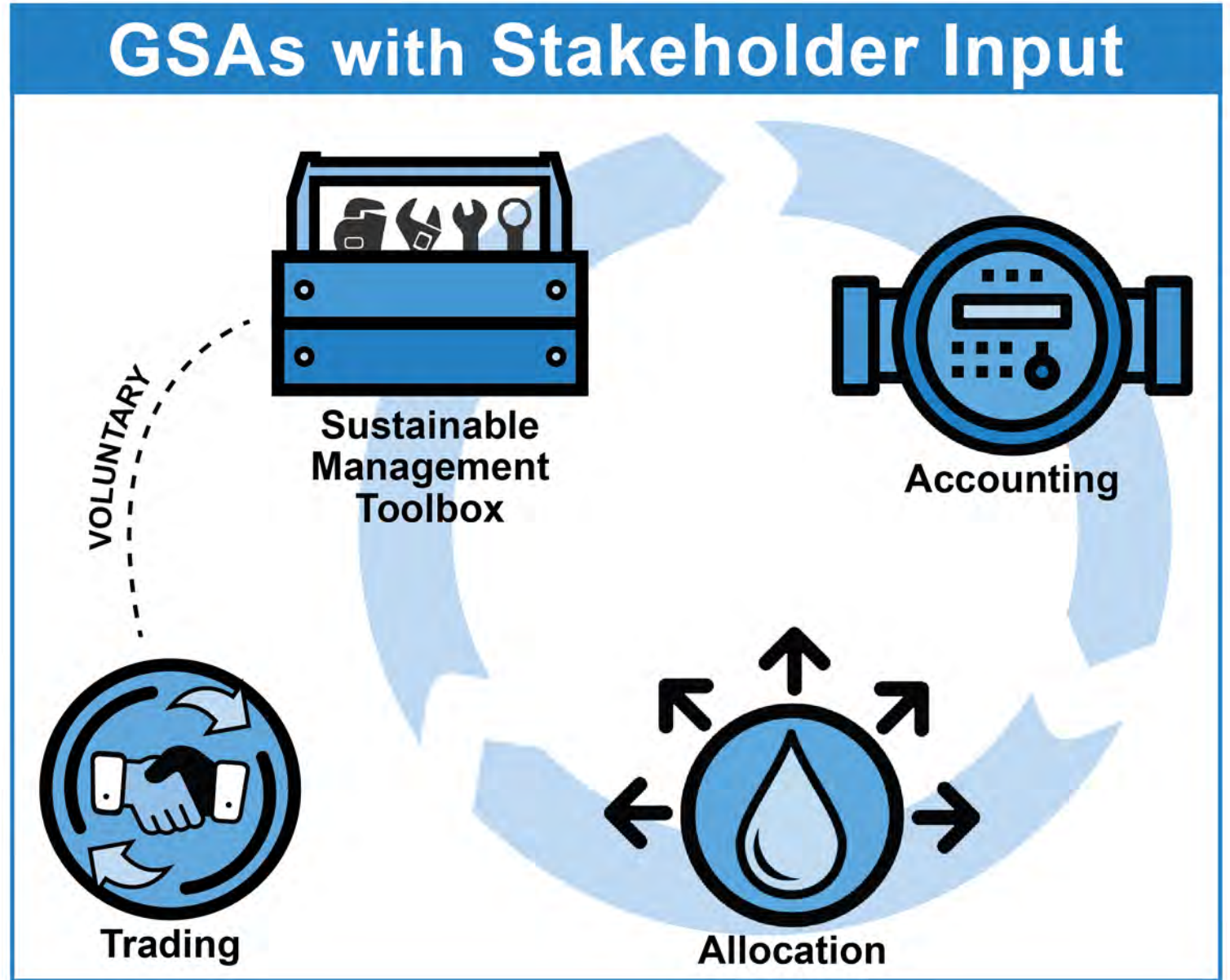


Purchased the ability to pump more water

\$\$

Sold allocation to
Grower A, fallowed crop

Accounting & Allocations: Building Blocks for Groundwater Trading

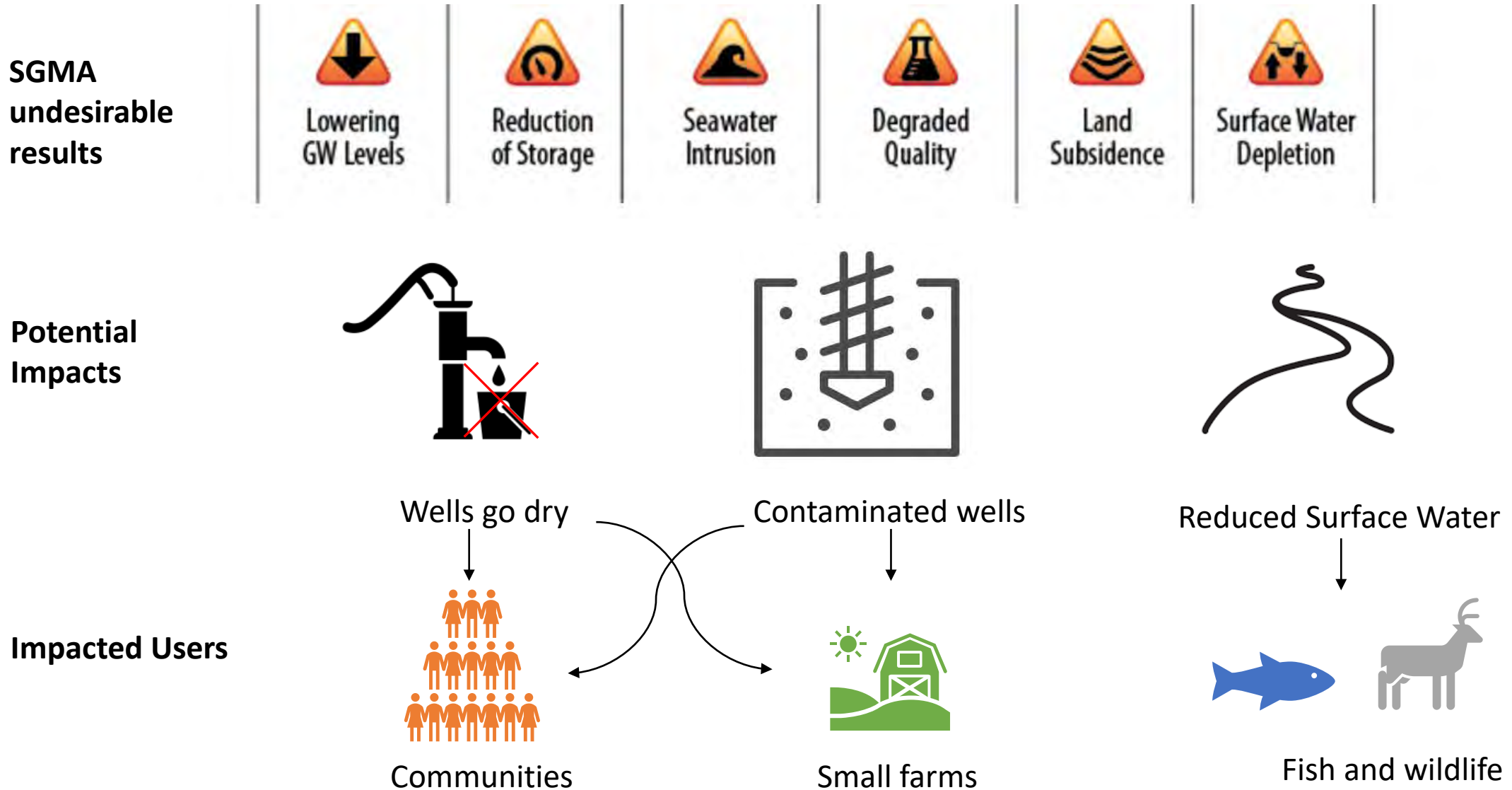


Groundwater trading: Best case scenario

- Flexible, efficient approach to reduction of groundwater use
- Reduced economic impact to individuals, communities, region
- No negative impacts on third parties
- Opportunities for diverse water users to participate in ways that benefit them



Examples of trading impacts relevant to small farmers, community drinking water, and ecosystems:



Examples of trading rules that could help minimize impacts to small farmers, community drinking water, and ecosystems:



Impacts	Trading rules
Pumping effects can cause nearby shallow wells to go dry	<ul style="list-style-type: none">• Spatial concentration limits• Pumping schedules
Contaminant migration can impact well water quality	<ul style="list-style-type: none">• Pumping restrictions to prevent migration• Requirements to provide substitute water
Excessive pumping near a river drops its level too low, imperiling fish	<ul style="list-style-type: none">• Directional restrictions (“sell-only” zone)• Closure dates
Landowners selling extraction allocations out from under tenant farmers	<ul style="list-style-type: none">• Notice requirements• Consent requirements
Various	<ul style="list-style-type: none">• Mitigation / compensation requirements



Panel Discussion: How will
groundwater trading impact different
stakeholders?

Lightning Round Questions

1. What stakeholders do you represent?
2. How is groundwater trading likely to impact or benefit the stakeholders you represent?
3. What needs to be in place for well-managed groundwater trading to happen successfully while protecting vulnerable users?



Presenters

- **Sarah Heard**, The Nature Conservancy
- **Dave Runsten**, Community Alliance with Family Farmers
- **Aaron Fukuda**, Tulare Irrigation District
- **Eddie Ocampo**, Self-Help Enterprises
- **Christina Babbitt**, Environmental Defense Fund
- **Ruth Dahlquist-Willard**, UC Cooperative Extension
- **Stephanie Anagnoson**, Madera County
- **Amanda Monaco**, Leadership Counsel





Groundwater Trading: Safeguards for Vulnerable Water Users

California Water Commission Workshop

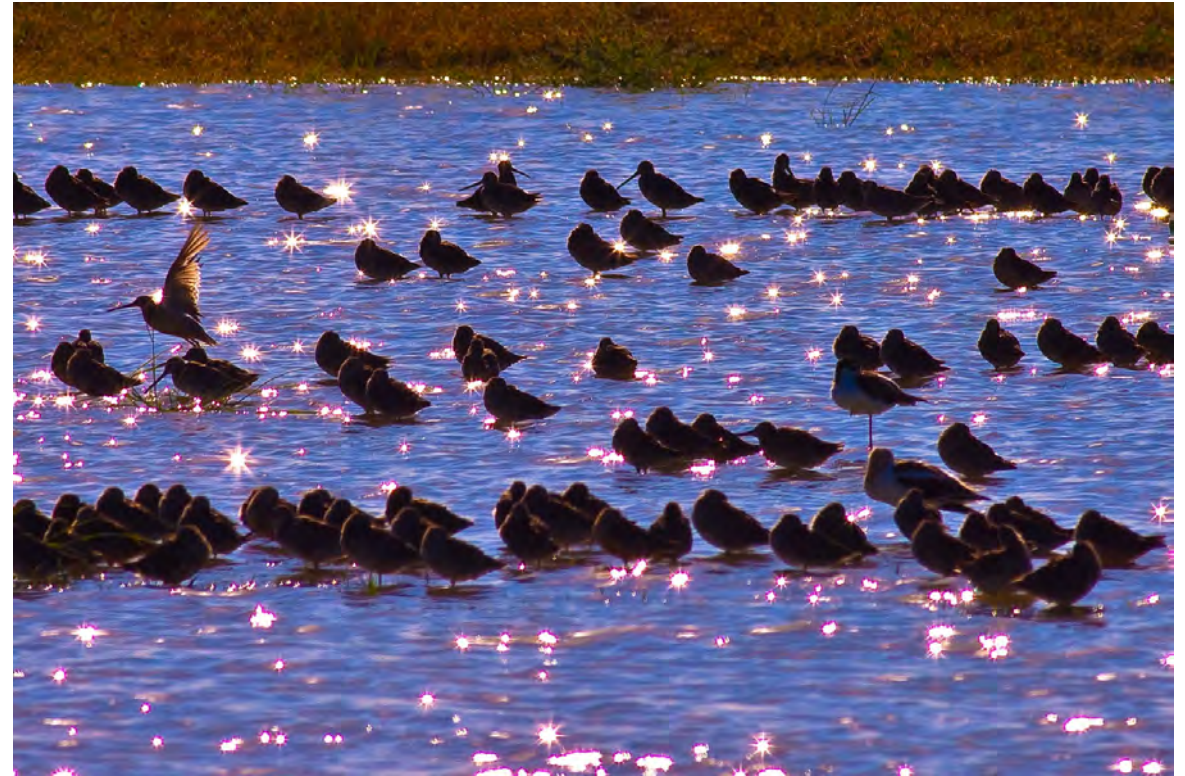
Sarah Heard, Director, MarketLab | October 28, 2021

Central Valley's vulnerable environmental resources

90% of groundwater dependent ecosystems have disappeared



Wetlands rely on pumping



Carefully designed markets have several key elements

Sound Groundwater Sustainability Plan
(GSP)

Open, public process

Mitigation of 3rd party impacts

Protections against market power

Accurate monitoring of pumping

Market testing + adaptation



Carefully designed markets have several key elements

Sound GSP

Open, public process

Mitigation of 3rd party impacts

Protections against market power

Accurate monitoring of pumping

Market testing + adaptation



GSPs should provide
adequate water for nature

Buying water should not be
essential for their survival



A fair, functioning market
requires an open process

Environmental stakeholders should
be included in market design



Trading can concentrate
pumping + impact sensitive
resources

Special Management Areas
are a tool to mitigate this risk



Dave Runsten

Community Alliance with Family Farmers (CAFF)

CAFF represents small- and medium-scale family farms, from urban gardens to 400-acre diversified organic farms. We also work with larger farms on climate smart practices.

Groundwater trading in overdrafted basins will be necessary for small farms to have access to additional water when they need it, such as during droughts. But it must be managed in such a way that it does not disadvantage small farms or incentivize landowners to sell the water out from under tenant farmers

Small farms cannot be expected to purchase additional water in a groundwater market on an ongoing basis

Small farms are not in a position to idle large parts of their land, so unless they are given a higher per acre allocation in areas solely dependent on groundwater, they are unlikely to survive.

Groundwater trading that protects small farms

In the allocation process, create allocations for drinking water and small farms that provide them the water they need in a normal year

- Small farms should be declared de minimis and need to purchase groundwater from a water market only during drought conditions, i.e. if surface water is cut or pumping allowances are reduced.
- How do we define small farms? Acreage? Sales? Local markets? Crop? Socially disadvantaged?

Market design:

- Neutral third-party administrator • Anonymous users • Metered wells • Start small and evaluate frequently, limiting trading initially • Adaptive management
- Transparency of data • Stakeholder participation • Special management areas to avoid dry wells or environmental impacts • Limit trading to ag-to-ag only

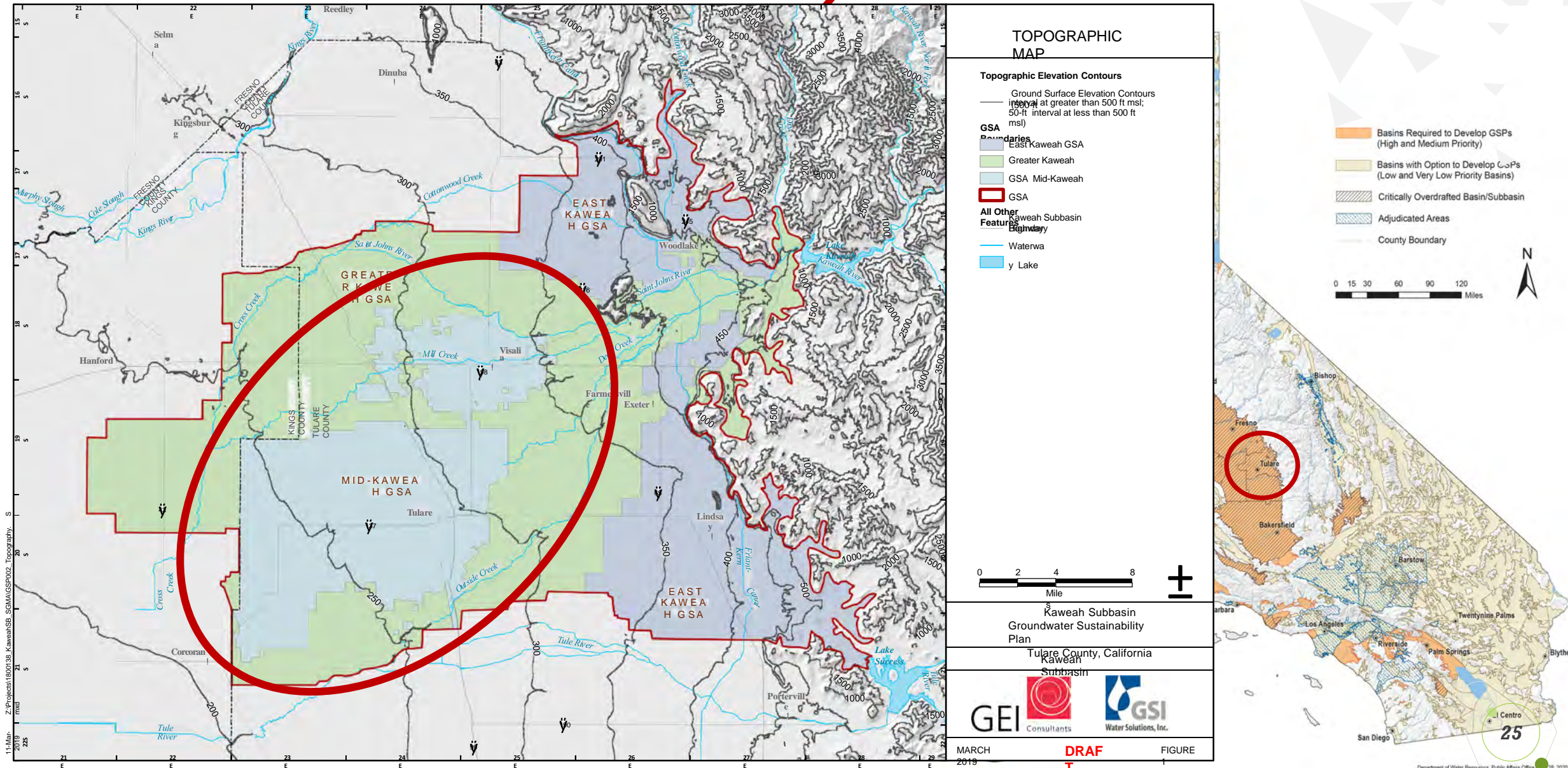


Kaweah Subbasin Water Marketing Strategy

A Local Perspective on Groundwater Markets

Kaweah Sub Basin

Mid-Kaweah GSA



Kaweah Subbasin Agriculture



Disadvantaged Communities

Urban



Environmental

Industrial

Goal of the Kaweah Subbasin Water Marketing Strategy

Allow for the transfer of water resources to assist beneficial users with securing reliable water supplies

- Without impacting beneficial users
- Keeping the local agricultural economy vibrant and active
- Retaining the social fabric of the area
- Enhancing local communities including the environment
- Achieving sustainability goals required under SGMA

Kaweah Subbasin Marketing Strategy

RECLAMATION *Managing Water in the West*

Funding Opportunity Announcement No. BOR-DO-19-F006

WaterSMART Grants: Water Marketing Strategy Grants for Fiscal Year 2019



U.S. Department of the Interior
Bureau of Reclamation
Policy and Administration
Denver, Colorado

May 2019

The screenshot shows the Bureau of Reclamation website. At the top is the logo and name "BUREAU OF RECLAMATION". Below it is a navigation menu with categories: "Water & Power", "Resources & Research", "About Us", "Recreation & Public Use", and "News & Multimedia". A search bar is located on the right. The main content area is titled "News & Multimedia" and features a news release titled "Bureau of Reclamation awards \$2 million to ten projects to develop water marketing strategies". The release includes a media contact (Peter Soeth) and a date (November 12, 2019). A sidebar on the left lists various content categories like "News & Multimedia", "News Releases", "News Stories", etc. A photograph of a dam is visible in the background of the news release.

— BUREAU OF —
RECLAMATION

Water & Power Resources & Research About Us Recreation & Public Use News & Multimedia

News & Multimedia

Reclamation / News & Multimedia / News Releases / News Release Archive / Bureau of Reclamation awards \$2 million to ten projects to develop water marketing strategies

NEWS & MULTIMEDIA

News & Multimedia

News Releases

Filter by Year

Filter by Region

Filter by State

Filter by Topics

News Release Archive

News Stories

Speeches

Congressional Testimony

Fact Sheet

Leadership Bios

Newsletter

Organization Chart

Media Contacts

Photos

Multimedia

Social Media

NEWS RELEASE ARCHIVE

Bureau of Reclamation awards \$2 million to ten projects to develop water marketing strategies

Media Contact: Peter Soeth, 303-445-3615, psoeth@usbr.gov

For Release: November 12, 2019

WASHINGTON – The Bureau of Reclamation today announced awards totaling \$2 million to ten projects to establish or expand water markets or water marketing activities. When non-federal cost-share contributions are included, these projects will accomplish more than \$4.6 million in water marketing planning activities.

The awards will go to projects from a diverse range of entities, including irrigation and water districts, states, tribes, cities and counties, and other districts with water delivery authority. The entities are located in Arizona, California, Colorado, Kansas, Texas, Oregon, and Utah.

Manager's Corner – Market Thoughts



Accelerated Development

With back-to-back dry years the GSAs and WMS Committee have accelerated the timeframe to develop the WMS

Accelerated Water Allocation Process



Market is for Kaweah Subbasin

The WMS is intended to serve the needs of beneficial users in the Kaweah Subbasin.

The Market is NOT:

For investors/landowners outside of the Kaweah Subbasin

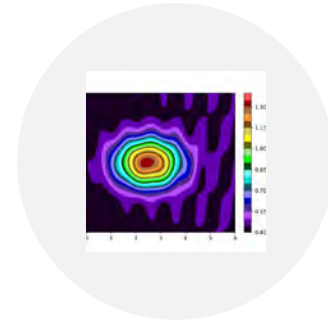
To monetize water for investment by outsiders



DACs and Environmental

The needs of our DACs and Environment should be considered in the WMS

Can they be part of the market rather than just protected from the market?

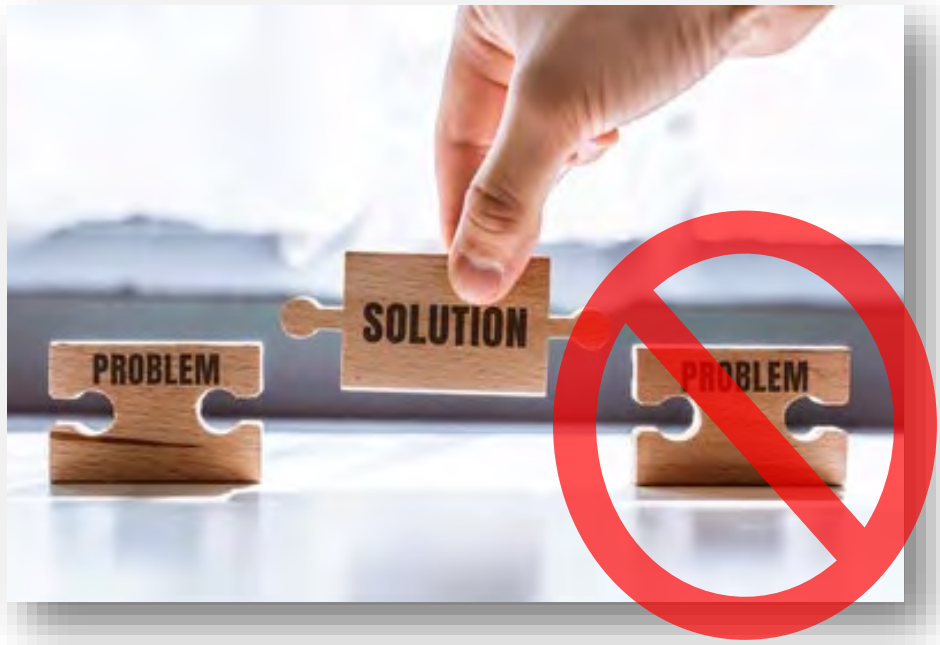


Trading is Localized

Trading is localized such that it will not impact local groundwater levels



Conclusion



Groundwater
Markets will not
solve all of our
problems.



Aaron Fukuda – Tulare Irrigation District /
Mid-Kaweah GSA

(559) 686-3425

akf@tulareid.org

www.tulareid.org

Thank You



October 28 Groundwater Trading Workshop

Eddie Ocampo

Director, Community Sustainability

Self-Help Enterprises

What stakeholders does your organization represent?



How is groundwater trading likely to impact or benefit the stakeholders you represent?

Potential Benefits

- Assurance that no over-pumping is occurring near or by domestic wells
- Creation of protected areas (i.e. Buffer Zones)
- Incentivizing projects that achieve multiple benefits
- Encourage conservation and efficient practices for all users of groundwater
- Enable cooperation, transparency, mutual benefits, and cost effectiveness of a market

Potential Impacts

- Localized drying of community and domestic wells
- Increased contamination levels
- Unaffordable water rates

What needs to be in place for well-managed groundwater trading to happen successfully while protecting vulnerable users?

1. Establishing extraction limit.
2. Creating Management Areas
3. Setting up monitoring networks and triggers
4. Emergency drinking water mitigation plans
5. Engaging community stakeholders (i.e. small community water systems and domestic well owners)

Thank you!

Eddie Ocampo
Director, Community Sustainability
Self-Help Enterprises
EddieO@selfhelpenterprises.org
(559) 802-1683

Advancing Well-Designed Water Trading Programs in California

Christina Babbitt, Environmental Defense Fund
California Water Committee Meeting
October 29, 2021



Surface Water
Depletion

Reduction
of Storage

Degraded
Quality

Seawater
Intrusion

Land
Subsidence

Lowering
GW Levels



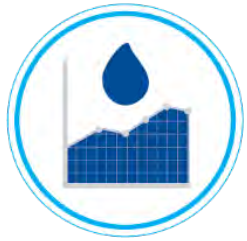
Well-designed water trading programs include...



Community
engagement



Allocations to meet
diverse needs



Water budget &
accounting



Well-designed
trading rules

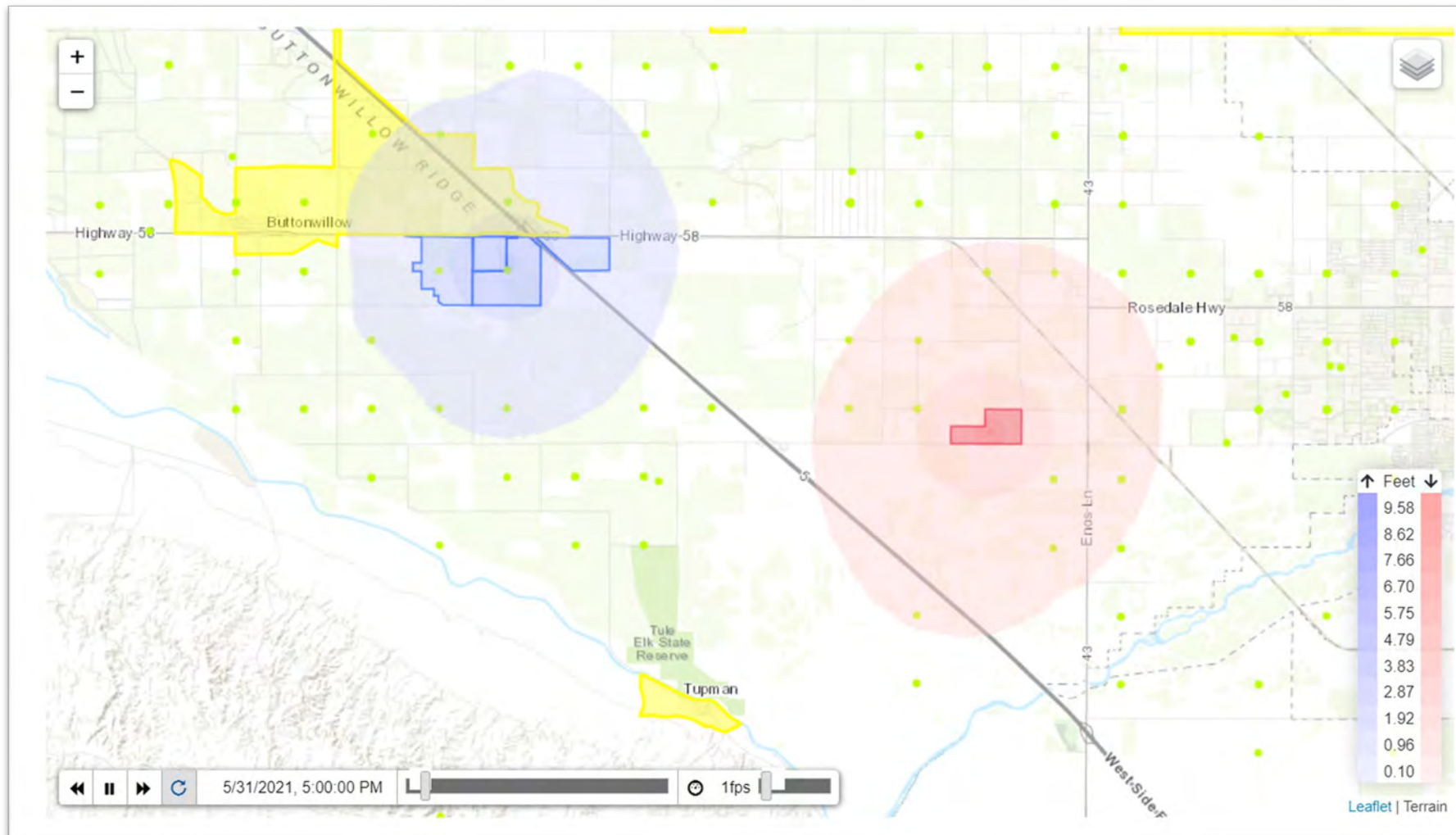


Monitoring &
reporting



Flexibility &
adjustment

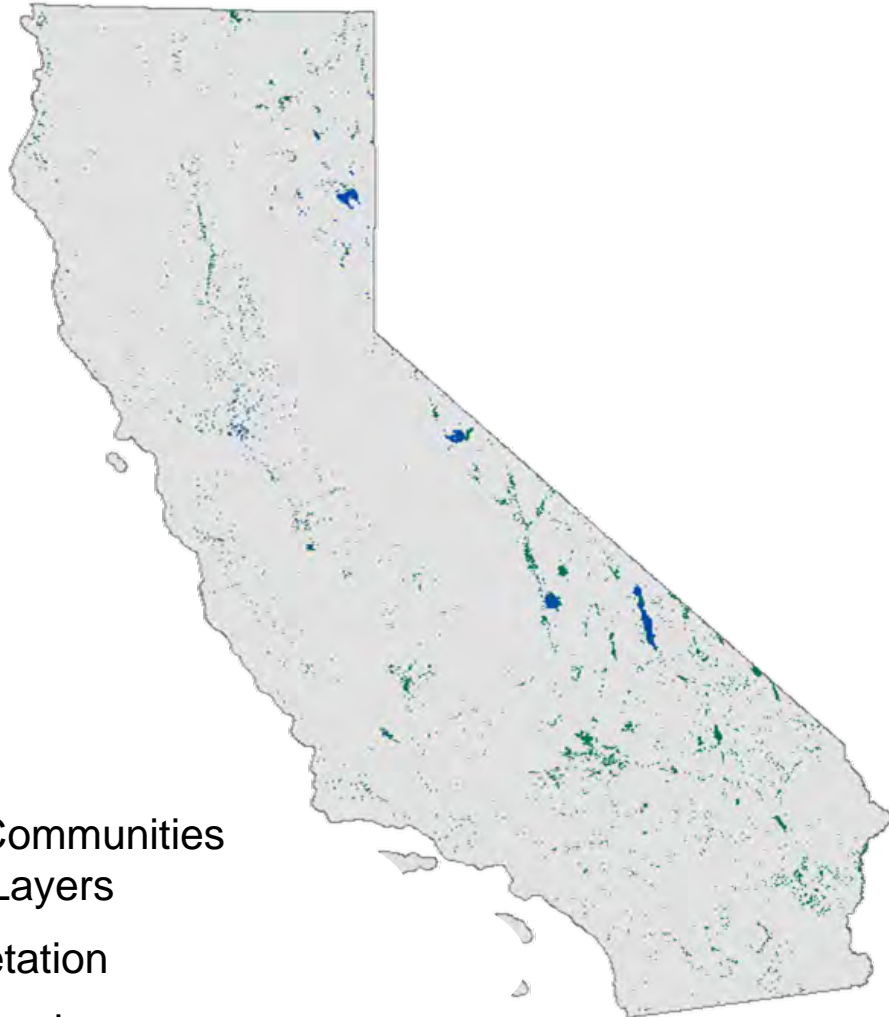
Understanding how a water trading program can affect groundwater levels



-  Seller parcel
-  Buyer parcel
-  Disadvantaged community
-  Domestic well

Groundwater Dependent Ecosystems

Ecological communities or species that depend on groundwater emerging from aquifers or on groundwater occurring near the ground surface



GDE Resources: <https://groundwaterresourcehub.org/>

Small-scale, socially disadvantaged farmers in the San Joaquin Valley



SJV Region	Farms < \$100,00 in sales	Socially disadvantaged operators	Socially disadvantaged and < \$100,00
Merced, Stanislaus, San Joaquin	6,682	2,972	2,167
Fresno, Tulare	4,918	4,798	3,518

“Socially disadvantaged” includes African American, Native Indian, Hispanic, and Asian American farmers under the Farmer Equity Act of 2017 (AB-1348)

How is groundwater trading likely to impact small farms in the SJV?

- Higher transaction costs to participate
- Small farms often not involved in decision-making
- Possibility of exclusion from trades within existing networks
 - e.g. groups of farmers selling to same buyer
- Lack the flexibility of larger farms and owners of multiple parcels
- Shallower wells, more vulnerable to local decreases in GW levels
- High risks for tenant farmers
 - Price of water compared to amount of yearly lease
 - Length of lease and security of land tenure
 - Following programs and incentives also have this risk



Valerie Shelton

Protecting small farms in groundwater markets:

Market design:

- Neutral third-party administrator
- Anonymous users
- Start small and evaluate frequently
 - Adaptive management
 - Transparency of data
- Stakeholder participation
- Restrictions on trading
 - Special management areas
 - Limit trading to ag-to-ag only

SGMA allocations by GSAs:

- Define exceptions for vulnerable communities
- Structure allocations to protect these groundwater users

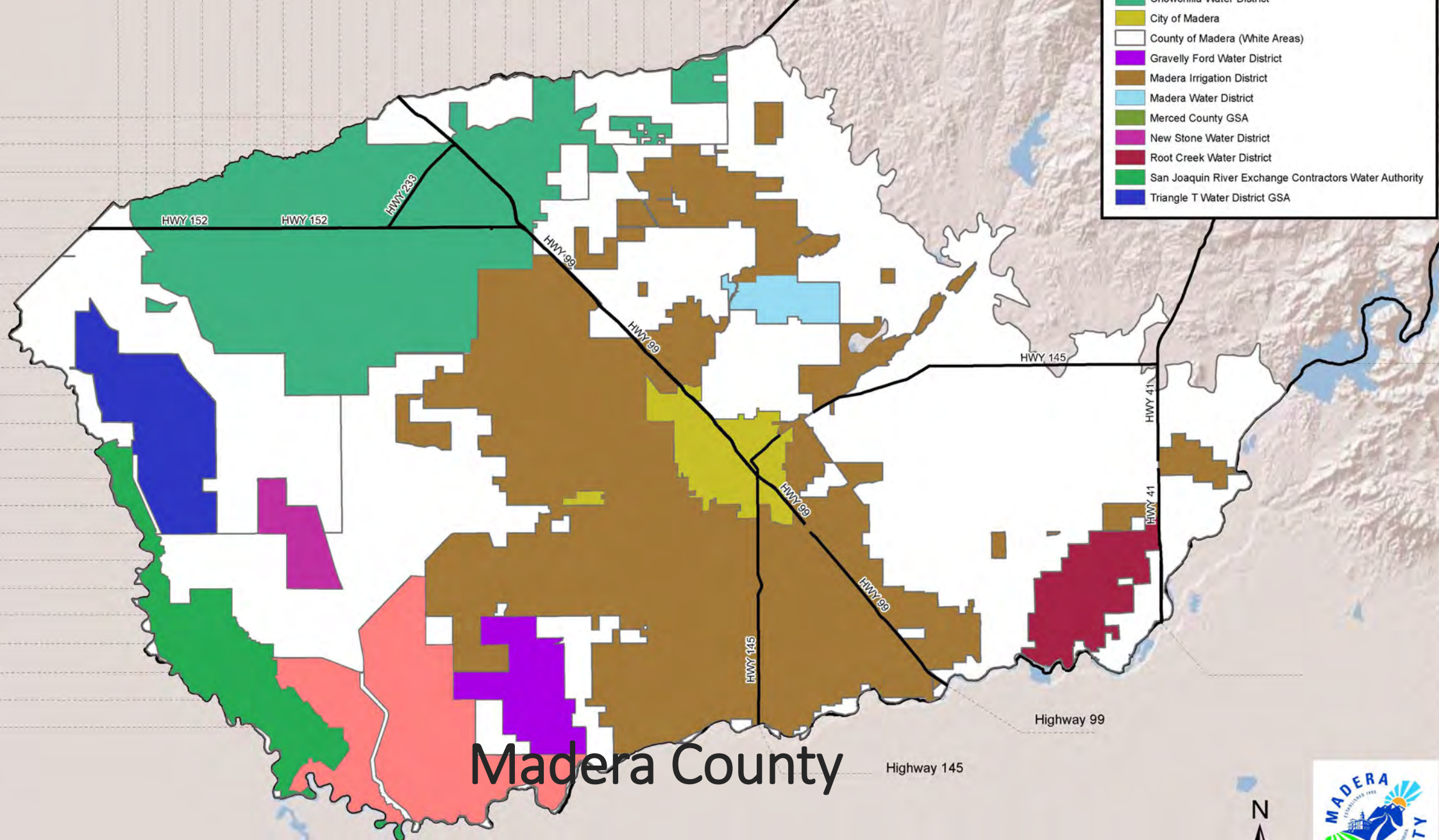
Assistance:

- Fund third-party organizations to facilitate market access
 - Technical assistance
 - Outreach and education
 - Managing groundwater trades for groups of small farms

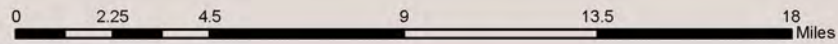


Avenue 27
Avenue 26
Avenue 25
Avenue 24
Highway 152
Avenue 22
Avenue 21
Avenue 20
Avenue 19
Avenue 18
Avenue 17
Avenue 16
Avenue 15
Avenue 14
Avenue 13
Avenue 12
Avenue 11
Avenue 10
Avenue 9
Avenue 8
Avenue 7
Avenue 6
Avenue 5

- Chowchilla Water District
- City of Madera
- County of Madera (White Areas)
- Gravelly Ford Water District
- Madera Irrigation District
- Madera Water District
- Merced County GSA
- New Stone Water District
- Root Creek Water District
- San Joaquin River Exchange Contractors Water Authority
- Triangle T Water District GSA



Madera County





Bureau of Reclamation WaterSMART Water Market Strategy Grant

Strong grower interest in a water market led Madera County to apply for the grant in 2018

Grant tasks include:

- Stakeholder Interviews
- Workshops
- Creation of Rules
- Creation and Operation of a Pilot Program:
Simulation



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maderacounty.com





Pilot Project: A Simulation

A simulation of a groundwater market

- 9-month period of real time simulated 9 years between 2020 and 2040
- Trades of sustainable yield allocation water occurred each month
- 58 people signed up; 25 people reliably participated each month
- Crops and zones were assigned to growers
- Variable hydrology including lengthy dry periods
- Feedback was provided during the trade once a month



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Challenges in Simulation

- Growers reduced their acreage rather than sold water
- Permanent crops and their high demand made for a less flexible market
- Expectation from ranchers of the ability to sell groundwater that they were not using
- Expectation from growers that this was the entire solution to water scarcity
- Learning curve for market function
- Administration of the market



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Disadvantaged Unincorporated Communities & Groundwater Markets in the San Joaquin Valley

Presentation by Amanda Monaco
for the

California Water Commission Groundwater Trading Workshop
October 29th, 2021

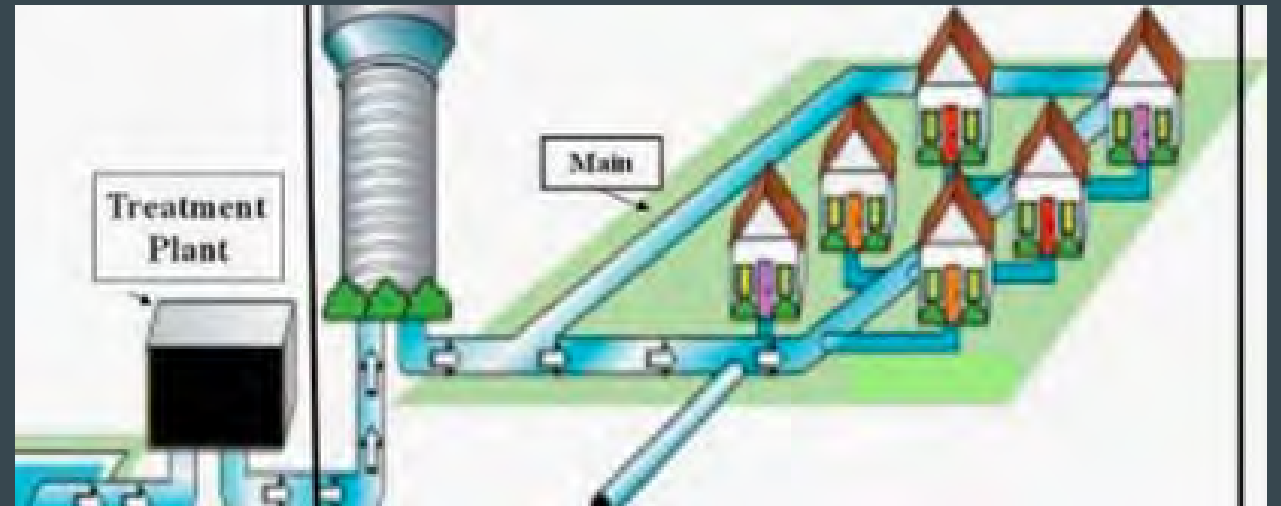
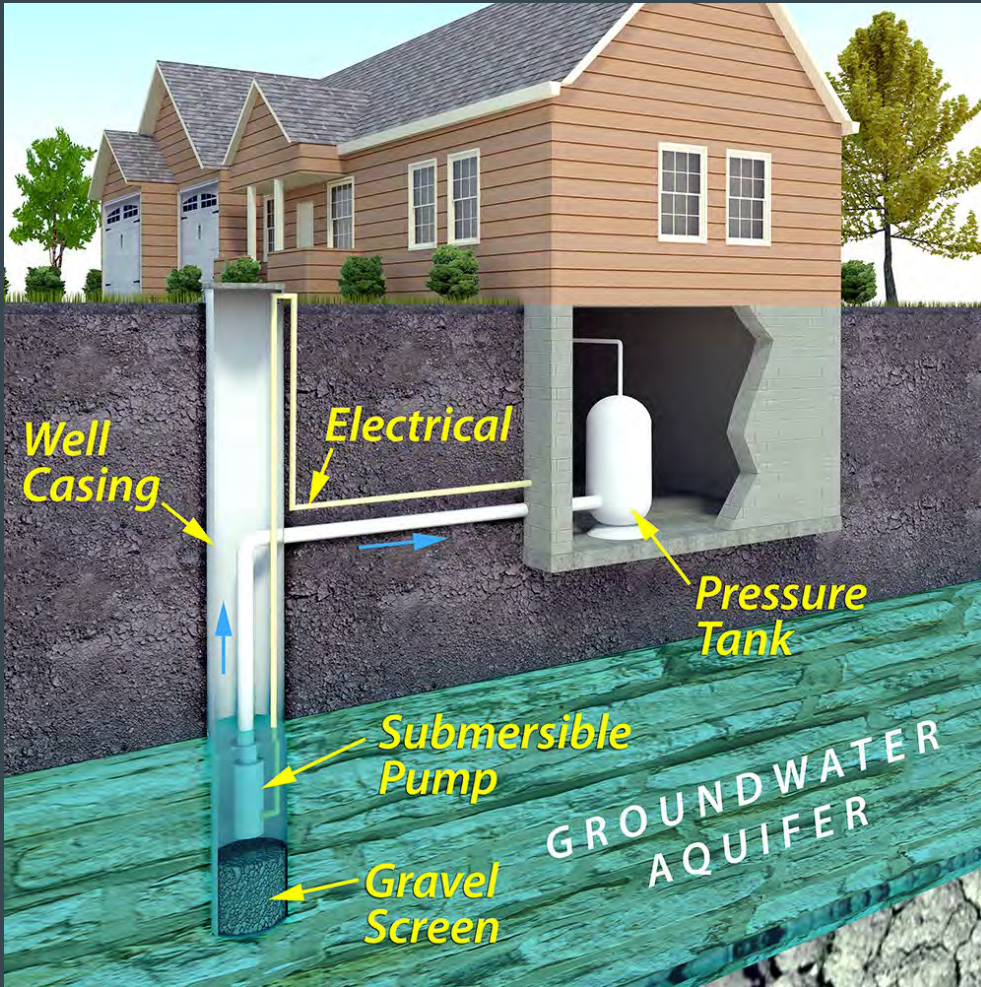


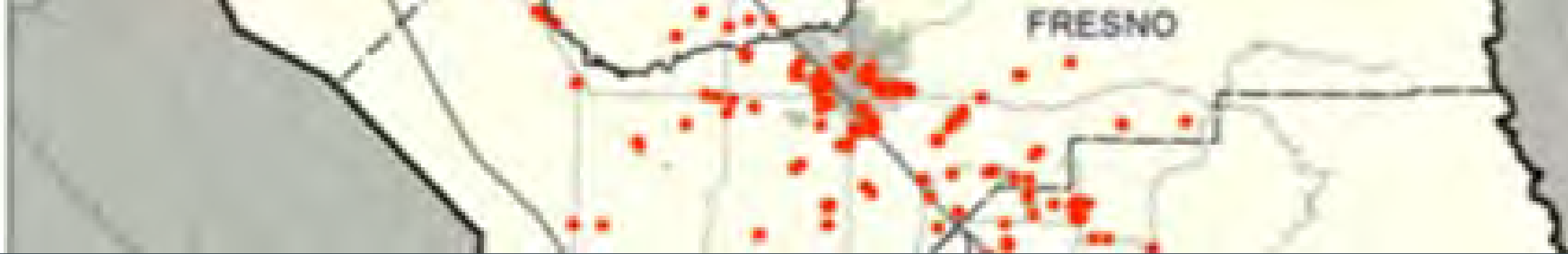
Source: PolicyLink analysis of 2000 U.S. census and county parcel and boundary data.

Leadership Counsel & our community partners



Disadvantaged communities in the San Joaquin Valley are the most vulnerable to falling groundwater levels, since they depend on shallow domestic wells and small community water systems.





**Resident's
3 main concerns
with groundwater markets**





1. Exacerbating existing inequities in water management

More financial power = more water

Technical and financial barriers to participating in market

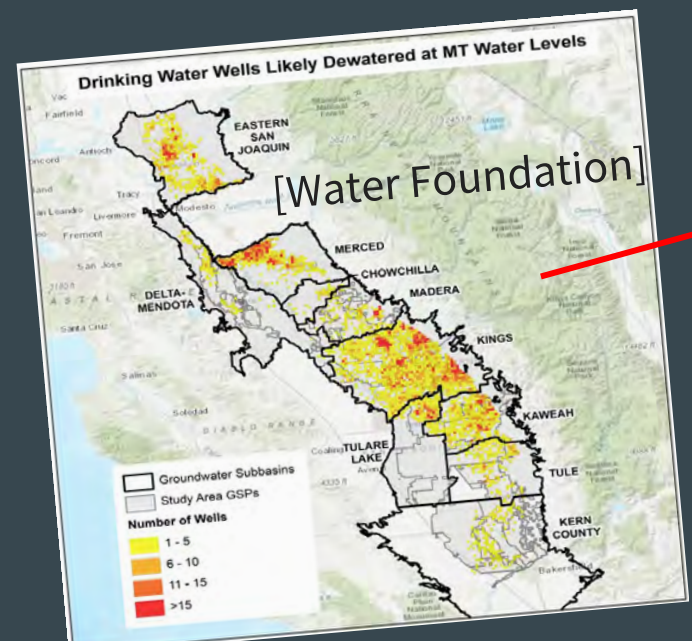
Localized impacts from concentrated pumping



FRESNO

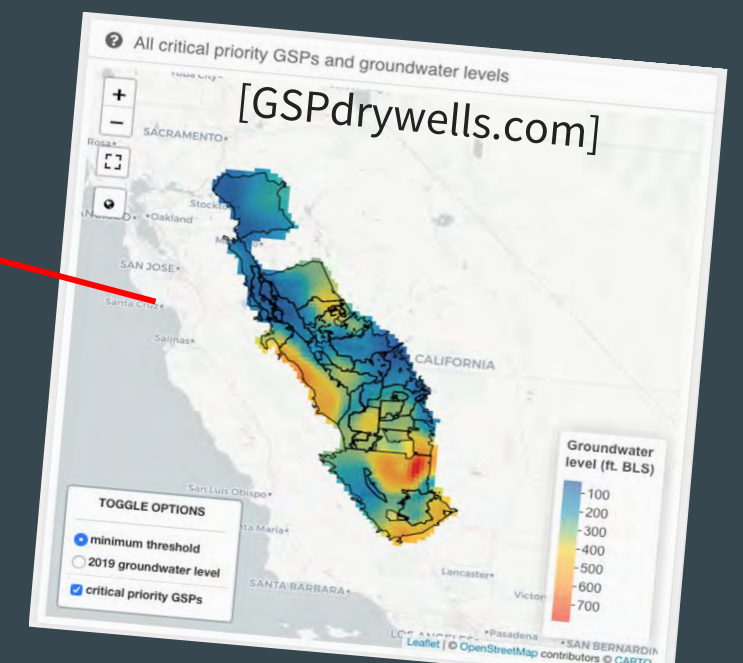
2. Concerns about governance: lack of trust in GSAs to protect drinking water.

Wells continually going dry, even without drought
GSPs plan for up to 12,000 more wells to go dry in the SJV



[Water Foundation]

**9,200 – 12,000 dry wells
from allowed
groundwater decline in
GSPs in the SJV**



[GSPdrywells.com]

FRESNO

3. Water is essential to life.

We should manage it as a public trust for everyone's benefit regardless of ability to pay, and not put it up for sale.

#HumanRight2Water



Instead of markets, use other tools to protect groundwater:

1. **Many other tools to influence individual behavior:** allocations, incentives/credits, fees
2. **Set management goals (SMC)** that protect drinking water access and quality
3. **Help connect vulnerable homes** to reliable water supplies.
4. **Gather complete data** about vulnerable drinking water users
5. **Tight monitoring** of drinking water impacts





Thank you!

Amanda Monaco

Water Policy Coordinator

Leadership Counsel for Justice & Accountability

amonaco@leadershipcounsel.org

Discussion: Thoughts, Opinions, and Concerns about Groundwater Trading

We'd Love to Hear What You Are Thinking About Groundwater Trading in California.

Two Options

- Raise Hand to Offer a Verbal Comment
- Make Comments in Chat Box





Presentation: Cross-Cutting Themes and Points of Divergence

Cross-cutting themes

- Trust is critical
- Part of a larger groundwater management effort
- Good data is imperative
- Start small – geographically, temporally
- Beware market power & gaming the system



Breakout Session: Points of Divergence

Reports Back: Points of Divergence

Presentation: The Role of the State

Role for the State

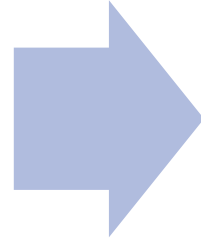
- Provide information & education
- Provide technical & financial assistance
- Provide guidance/minimum standards
- Ensure metrics, monitoring are in place
- Ensure Human Right to Water is met
- Enforce safeguards for vulnerable users
- Other?



Large-group Discussion: The Role of the State

Next Steps

Commission timeline



Frame the Issue

- Expert Panels
- Small Group Conversations

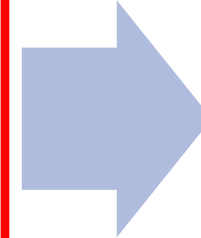
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Draft White Paper

- Present Draft
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January - March 2022

Contacts

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Joseph.Yun@water.ca.gov



Thank you.