

Groundwater Markets and Land Equity under SGMA

Ruth Dahlquist-Willard
UC SAREP Interim Director

August 15, 2024

California Agricultural Land Equity Task Force Meeting

SGMA and Land Equity: Groundwater Markets

- SGMA requires local basins to be sustainable
 - Increase supply (e.g. recharge)
 - Reduce demand (e.g. limit pumping)
- Farmland is now tied to groundwater allocations from GSAs
 - **Allocation** = max amount of groundwater a user is allowed to pump
- Groundwater can now become a commodity that is bought and sold
 - Landowners can buy or sell their allocations

→ **Groundwater market**



Status of groundwater markets in CA:

Surface Water:

- Trading in surface water markets is already happening
- Water rights apply to surface water
- Water rights holders can lease or permanently sell their water rights



Groundwater:

A few groundwater markets already exist:

- Fox Canyon (Ventura County)
- Mid-Kaweah Groundwater Sustainability Agency (GSA) pilot (Tulare County)
- Groundwater trading has not been regulated so far



Status of groundwater markets in CA:

- The Governor's Water Resilience Portfolio called on state agencies to incentivize groundwater markets

“with rules that safeguard natural resources, small- and medium-size farms, and water supply and quality for disadvantaged communities”

→ CA Groundwater Commission white paper with recommendations for best practices
(May 2022)



- Interest in groundwater trading to potentially reduce economic impacts of SGMA to farming communities
 - More flexibility for farmers
- Interest from conservation groups (e.g. Nature Conservancy in Ventura County)
 - Protecting farmland from sale for development

<https://cwc.ca.gov/Water-Resilience-Portfolio>

Who benefits from groundwater markets?

- **Farming operations with flexibility to fallow some acreage**
 - Large amounts of land
 - Multiple parcels of land
- **Higher-value land uses**
 - Farmers with higher-value crops can purchase water from those with lower-value crops or other water uses

“By creating a path for water to find its **highest-value uses**, trading can lessen the costs of temporary shortages during droughts and support long-term shifts in water use patterns.” – PPIC

→ **Groundwater markets benefit those who can pay more for water**

Equity concerns with **groundwater markets**

Market power: larger users can influence trades and prices for their own benefit

Trading decisions could exclude farmers for various reasons:

- Only trade with sellers/buyers you know
- Only trade with sellers/buyers that sell to the same wholesale company
- Only trade with sellers/buyers that produce the same commodity
- Potential for large companies to influence individual farmers
- Potential for discrimination

→ Access to groundwater markets could be difficult for farmers with fewer resources, niche crops, or direct/local marketing

Equity concerns with groundwater markets

- Higher transaction costs to participate
- 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

The structure of SGMA allocations will have a large effect:

- Across the board “one size fits all” reductions vs. considering different types of farms
 - Can define based on acreage, historical water use, types of crops, etc.
- Small farms often not involved in decision-making
- **Avoid models in which small farms must purchase water to remain viable**

Best practices from Fox Canyon groundwater market:

- **Neutral** third-party administrator
- **Anonymous** users and trades
- **Adaptive** management
 - Start with small pilot, frequently re-evaluate benefits and unintended consequences
 - Transparency of data (other than identify of users)
- Strong stakeholder participation
- Measurement of groundwater use with meters designed to avoid cheating
- Avoid rapid deployment of technological platforms



Welcome

User Name: *

Password: *

Logon

Welcome to the FCGMA Online Web Site!

If you have an existing account with the FCGMA (for example you receive Semi-Annual Groundwater Extraction Statements (SAES) in the mail, or are the registered well owner with the FCGMA) and want to log in to this website for the first time, please contact either Kathy Jones at (805) 645-1372 or Kathleen Riedel at (805) 654-2954 (between 8AM and 5PM, Monday through Friday) to obtain your Username and Password. For more information about navigating the Site, please see the FCGMA Online Owner-Operator User Guide posted at <http://fcgma.org>.

Thank you!

Best practices from Fox Canyon groundwater market:

- **Neutral** third-party administrator
- **Anonymous** users and trades
- **Adaptive** management
 - Start with small pilot, frequently re-evaluate benefits and unintended consequences
 - Transparency of data (other than identify of users)

Limits on trading:

- Ag-to-ag only
 - Only include urban areas if model is already working for ag
- Limit to within GSA or sub-basin
- Limit direction of trading
 - e.g. east to west
- Define special management areas



FOX CANYON
Groundwater Management Agency

Welcome

User Name: *

Password: *

Logon

Welcome to the FCGMA Online Web Site!

If you have an existing account with the FCGMA (for example you receive Semi-Annual Groundwater Extraction Statements (SAES) in the mail, or are the registered well owner with the FCGMA) and want to log in to this website for the first time, please contact either Kathy Jones at (805) 645-1372 or Kathleen Riedel at (805) 654-2954 (between 8AM and 5PM, Monday through Friday) to obtain your Username and Password. For more information about navigating the Site, please see the FCGMA Online Owner-Operator User Guide posted at <http://fcgma.org>.

Thank you!

Creating exceptions in allocation models:

- Define exception criteria to be as specific as possible to more vulnerable groundwater users
- Classify as “de minimis” or develop an alternate or tiered allocation model
 - Small-scale users such as domestic well owners can be exempted from the allocation model

A well-defined exception with multiple criteria is harder to take advantage of

Multiple criteria to avoid larger pumpers taking advantage of exception:

- Size of farm
 - USDA definition of small farm: \$350,000 or lower annual sales
 - Can also define acreage limits based on local patterns
- Type of crop or diversified system
- Defined special management area
- Markets:
 - Direct markets such as farmers markets or CSAs
 - Local markets within a defined radius
- Socially disadvantaged farmers

Access for sale? Overlying rights, land transactions, and groundwater in California

Jenny Linder Rempel^{1,4,*}, Ella Belfer^{1,4,*}, Isha Ray¹ and Rachel Morello-Frosch^{2,3}

Percentage of Overlying Transacted Acres Bought (Annual)

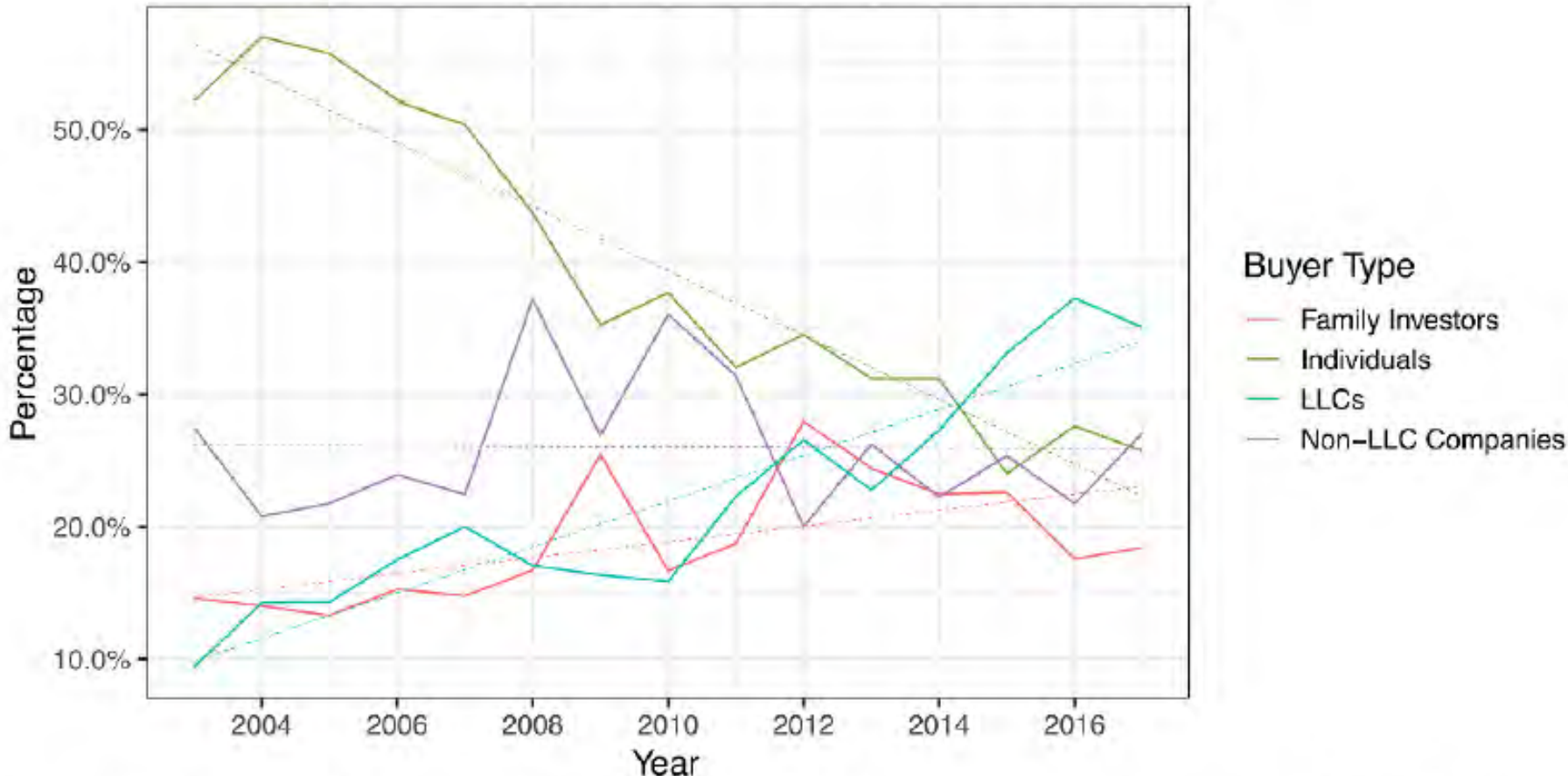


Figure 3. Percentage of transacted acres overlying alluvial basins bought annually by buyer type, from January 2003–September 2017. Linear trendlines added for visual interpretation.

California Water Crisis Fueled by Investment Bank Profit

Peter Waldman, Sinduja Rangarajan, Mark Chediak, Jeremy Cf Lin, Kyle Kim (Bloomberg)

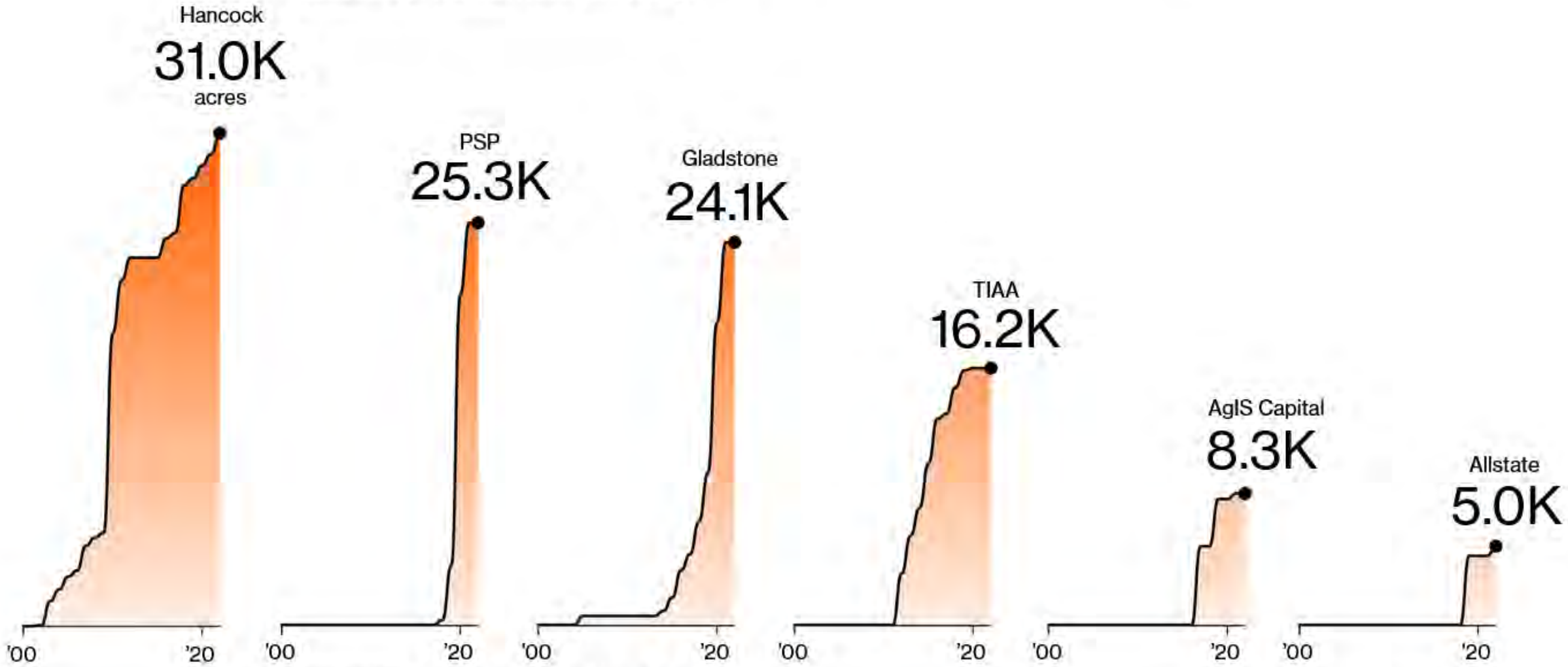
- Since 2010, six major investors have quadrupled their farmland in California (almost 120,000 acres)
- Since 2019, one of every six of the deepest wells in the San Joaquin Valley has been drilled on land owned or managed by outside investors (from analysis of state well completion reports through Aug 2022)
- Two of the top three landowners drilling the greatest number of deep wells since 2019, are institutional investors: TIAA and the Public Sector Pension Investment Board of Canada

Investments:

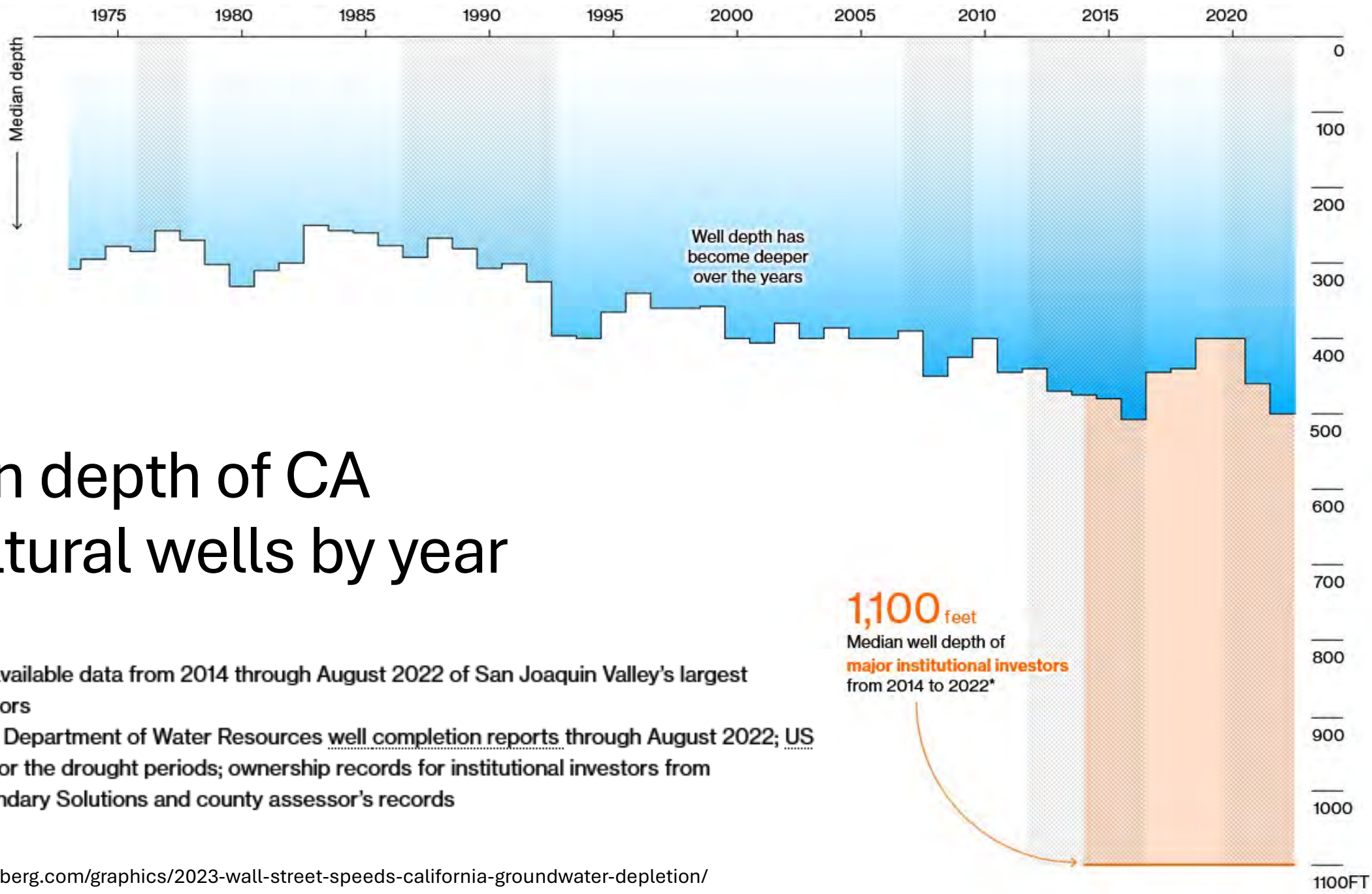
- **TIAA:** at least \$258 million into about 8,600 acres of California nuts, grapes and row crops, 2015 – 2019
- **Hancock:** more than \$67 million on at least 6,500 acres of permanent crops and other produce, 2016 – 2021
- **Gladstone Land Corp.:** \$518 million to buy 23,000 acres of mostly almonds and pistachios, 2015 – 2021, (leased to local farmers)
- **Farmland Reserve** (Church of Jesus Christ of Latter-day Saints) invested about \$60 million in ~ 1,500 acres of nut orchards since 2016.
- Other institutional buyers: **Allstate Insurance, Prudential Financial**

Institutional Investors Scoop Up Agricultural Land In Central California

Acreage of agricultural land purchased by major institutional investors in nine counties in the San Joaquin Valley



Source: Ownership records from [ParcelQuest](#)



Median depth of CA agricultural wells by year

Note: *Based on available data from 2014 through August 2022 of San Joaquin Valley's largest institutional investors

Source: California Department of Water Resources well completion reports through August 2022; US Drought Monitor for the drought periods; ownership records for institutional investors from ParcelQuest, Boundary Solutions and county assessor's records

Policy recommendations for land equity:

Best practices for groundwater market design

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

SGMA allocations by GSAs:

- Define exceptions for vulnerable communities
 - Small/diversified farms, socially disadvantaged farmers, tenant farmers, etc.
- Structure allocations to protect these groundwater users

Technical assistance:

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

Policy recommendations for land equity: Requirements for groundwater markets under SGMA



A State Role in Supporting Groundwater Trading
with Safeguards for Vulnerable Users:
Findings and Next Steps

May 2022

- CA Water Commission paper lists best practices as recommendations only
- Potential for increased regulation or review under SGMA
- Potential for policy to create incentives for better-designed groundwater markets