

WestWater Research, LLC



"We Know the Value of Water"

Leading Economic Consulting Firm in Water Resources



Valuation &

Appraisals

WestWater is nationally recognized for

our expertise in water right appraisals

and have helped define the standards

for water valuation in many of the

western states.

Transaction Advisory

We support the development of robust strategies for water transactions and help to navigate water assets through an information-driven process to achieve a successful transaction.



Market Analysis We ensure clients are well informed on current water resource economics. trading activity, as well as regulatory and policy changes that influence water

Economic &



Waterlitix

- Nation's largest and most comprehensive pricing source for water transactions
- Regularly updated to maintain market-leading pricing information across the state and nation
- 30,000+ water transaction records



WestWater Project & Office Locations

California	Southwest	Rocky Mountain	Pacific Northwest
1330 21st St #202	4747 N 7 th St. #412	205 S Meldrum St.	20522 NE 116 th Cir.
Sacramento, CA	Phoenix, AZ 85014	Fort Collins, CO	Brush Prairie, WA
95811		80525	98606
	1330 21 st St #202 Sacramento, CA	1330 21st St #202 4747 N 7th St. #412 Sacramento, CA Phoenix, AZ 85014	1330 21st St #202 4747 N 7th St. #412 205 S Meldrum St. Sacramento, CA Phoenix, AZ 85014 Fort Collins, CO

Downey Brand LLP

DOWNEYBRAND

Downey Brand is a premier full-service law firm based in Sacramento, California, with a strong regional presence throughout California and beyond.

For almost 100 years, we have been at the forefront of legal issues shaping water law, natural resources, and environmental regulation. Our team of attorneys brings deep experience in groundwater, surface water rights, water quality, and the complex regulatory frameworks relevant to Western water markets.

Relevant experience:

- Water right litigation before courts and California SWRCB
- Water transfer due diligence
- Groundwater adjudications

Sacramento

621 Capitol Mall 18th Floor Sacramento, CA 95814 tel: 916.444.1000 fax: 916.444.2100

San Francisco

455 Market Street Suite 1500 San Francisco, CA 94105 tel: 415.848.4800 fax: 415.848.4801

Stockton

3425 Brookside Road Suite A Stockton, CA 95219 tel: 209.473.6450 fax: 209.473.6455

Webinar Outline



1. Overview of the Western Water Markets



2. Legal and Policy Considerations for Water Trades



3. Current Changes in Water Law & Policy

4. Q&A Session

Overview of Western Water Markets

A summary of why we see water trading, what is being traded, the scale of trading, and how it relates to agricultural lands



Western Water Stress & Response



Supply & Demand Imbalance

Groundwater overdraft

Population growth

Reduced snowpack **Environmental** issues / ESA

Reduced streamflow Industrial uses

Terminal lake

Over-allocation

decline

Changed timing of streamflow

Recreational water uses

Seawater intrusion

Irrigation demand hardening

Degraded water

quality

Regulatory & Market Responses

Water right curtailments Water right transactions (reallocation)

Groundwater allocations

Incentivized conservation

Dedicated instream flows Farm buyout programs

Water conservation mandates

New technology developments

Water use scrutiny

New infrastructure projects

Examples

Pacific Northwest

Salmon recovery (ESA) → Dedicated instream flows & Water transactions Pumping impacts on Snake River → Groundwater allocations & Water transactions

California & Arizona

Groundwater overdraft → Groundwater allocations SGMA (CA) & AMAs (AZ) Reduced snowpack → Water use scrutiny & water transactions Population growth → New infrastructure projects & Water transactions

Intermountain West

Terminal lake decline (Great Salt Lake) → Water transactions & Incentivized conservation Localized GW overdraft (San Luis Valley) → Farm buyout programs & water transactions Population growth → Water transactions & New projects

Water Market Activity

Established Tool to Respond to Water Stress

- With variable water supplies and changing demands, we need the ability to reallocate water uses → water right transactions
- Western U.S. water markets have been active and responding to supply & demand changes for over 20 years.

Water Market Activity is Often Very Local

 Water trades only occur when the physical supply can be accessed by the buyer

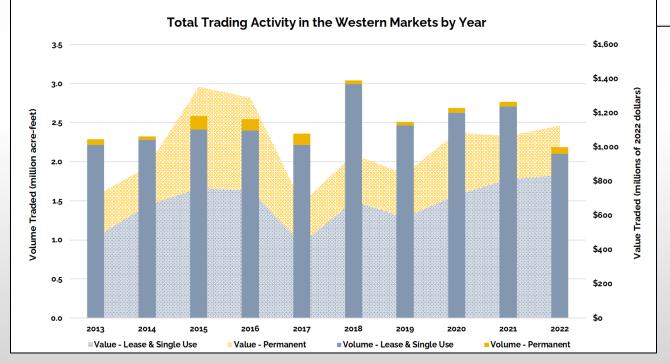
- California: broad geographic area
- Most other places: 1-2 county area
- · Local conditions define pricing & trading

Water Leases are Majority of Trades

- Water sales are somewhat rare
- Multiple sectors have turned to water leases and more sophisticated contracts to meet water supply needs (environmental, municipal, industrial)







Commonly Traded Water Assets



Surface Water Rights

- Direct use of stream flows when in priority
- Active Markets:
 - o California
 - Colorado
 - Nevada
 - New Mexico
 - Utah
 - Washington





Groundwater Rights

- Withdrawal and use of groundwater through wells
- Active Markets:
 - Arizona
 - o California
 - Colorado
 - Texas



- Water stored underground in the aquifer for later withdrawal
- Active Markets:
 - Arizona
 - California





Effluent

- Entitlement to use treated wastewater, generally for irrigation, industrial use, or groundwater recharge
- Active Markets:
- Arizona
- California
- Colorado

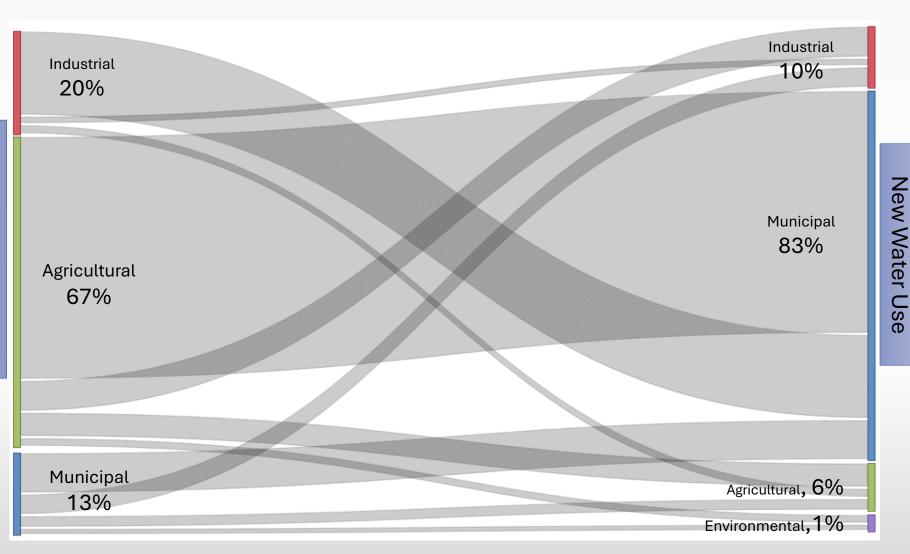


- Entitlement to store water for use at a later time (e.g., reservoirs)
- Active Markets:
 - o California
 - Colorado
 - Idaho



Market Participation



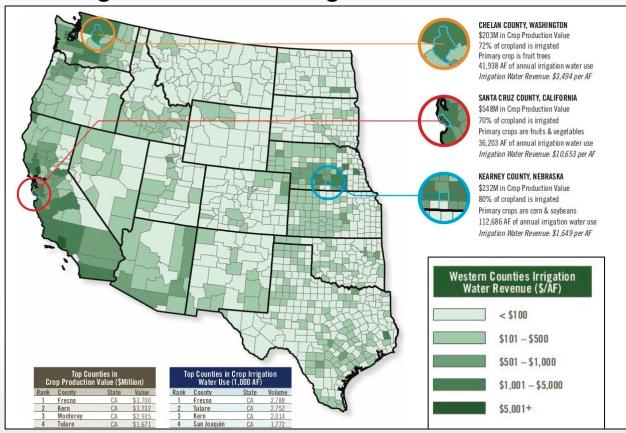


- Agricultural to municipal transfers comprise the majority of market activity
- Industrial and environmental water users are active lessors
 - E.g., short-term oil & gas operations
 - E.g., annual response to hydrology and need for in-stream flows
- Not shown: Tribes provide significant volumes to the lease market as holders of large, undeveloped water rights

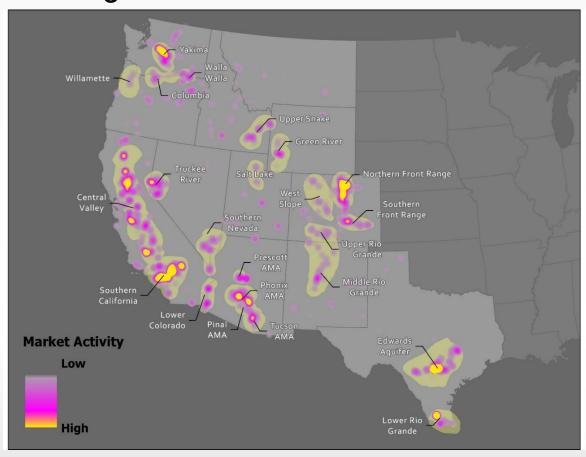
Pockets of High Water Value



High Value Water in Agricultural Use



High Value Water in Transactions



October 2015



November 2020



For more info on agricultural water values, click on icons



For more info on water markets, click on icon.

Water Market Activity & Agricultural Lands



Most water trades have agricultural sellers

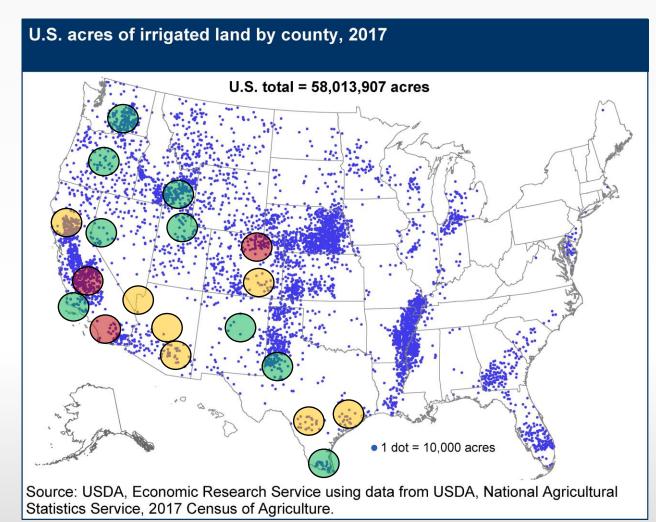
- Most dots of water trading activity are found in places with irrigated lands
- Trading activity is often demand (buyer) driven

Water market opportunities for farmland:

- Water leases to various sectors
- Payments for reduced water use
- Water right sales to high value buyers

Water market opportunities with farm properties are often very local

- Multiple factors (stresses & responses) determine whether water trades are needed
- Pricing and economics of water market opportunities (versus farming) are also very local and influenced by multiple factors:
 - Value of agricultural production
 - Relative scarcity of supply
 - Land development & home building



Colored dots represent water trading activity (see previous slide)

Legal & Policy Considerations for Water Trades

A summary of legal and policy aspects that are critical to completing water trades or influence trading activity.



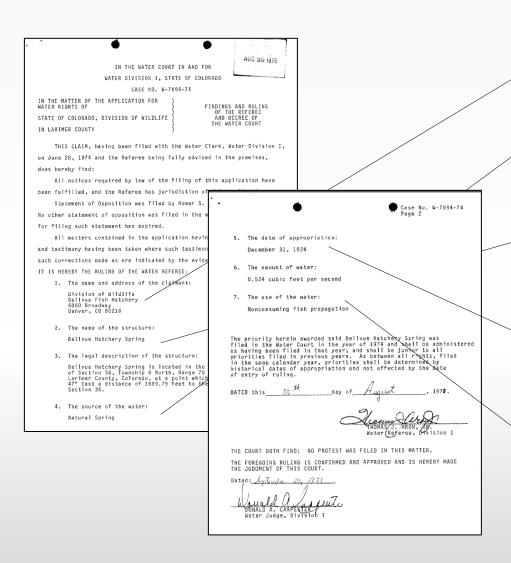
What is a water right?

- Water is a public resource. It belongs to the public and is managed by state governments and courts.
- A water right establishes that a person or entity may utilize a public resource under strict conditions and subject to the water resource being available.
- The right to use water is the **property** held by the owner. Water right holders are not owners of the water.
- Water is managed by state governments. During western settlement, Congress deferred water appropriation decisions to local customs and court rulings in the new territories, thereby establishing a general rule that water is <u>not</u> managed by the Federal government. This has created differences in water right structures between Western states.

Common Water Right Principles in the West

- **Prior Appropriation**. In all Western states, "first in use, first in right." But California and other states also recognize riparian and overlying rights (with a superior priority)
- Priority. Senior rights are served before junior rights during shortage
- Beneficial Use. Water can only be used for purposes that are productive of public benefit and promote the health, safety, and welfare of the people of the state.
- Use it or lose it. Extended non-use of appropriative rights can result in forfeiture
- Transferability. Rights can be bought, sold, or leased (often requiring regulatory approval)

What does a water right look like?



Who is using the water

Owner

What water will be used

Source

Amount (Volume / Flow Rate)

Where is the water being used Point of Diversion Place of Use

When will the water be used Period of Use
Priority Date

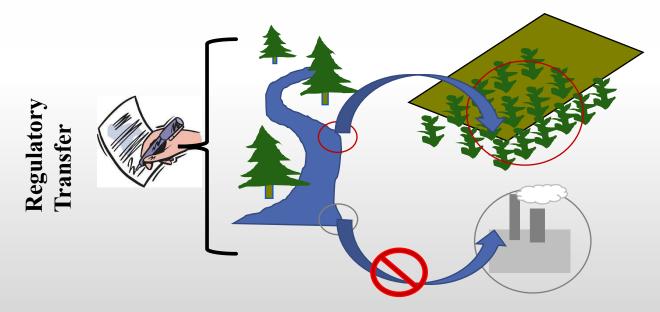
Why is the water being used *Purpose of Use*

How is a water right transferred?

Its like buying a house...

Ownership Transfer





- A water right allows the owner to divert water from natural source under **specific conditions**
- The water right owner cannot independently decide to divert and use water under different conditions or sell the right to do so
- Water marketing can only occur under <u>defined</u> <u>frameworks</u>

Importance of defining water rights

- Certainty and Trust. Buyers and sellers must know exactly what they are buying and selling—how much, from where, and under what conditions.
- Enforceability. Institutions are necessary uphold and enforce water rights and transactions.
- Transferability. It is easier to value, trade, and integrate into markets to buy, sell, and lease water.
- Conflict Reduction. Certainty limits disputes, reducing litigation and helping to resolve competing claims.
- Resource Management. Clearly defined rights and effective governance make it possible to manage the resource in a sustainable manner

Challenges to marketing water

- Transaction Costs. High costs to determine unquantified correlative rights—see groundwater adjudications in California
- Scalability. How to expand small, localized resources into basin-wide, state-wide, or region-wide markets?
- Regulatory Hurdles. Federal, state, and local government can control how water is extracted, diverted, used, and transferred to protect public
- Physical constraints. Infrastructure needed to move or store water.

Current Changes in Law & Policy Impacting Water Trading

A few trends & recent changes that may impact the type and scale of water market activity.



Increased Groundwater Management

Overallocated groundwater rights & permits









Water market development to:

- 1. Trade pumping allocations
- 2. Access imported water supplies
- 3. Generate storage credits

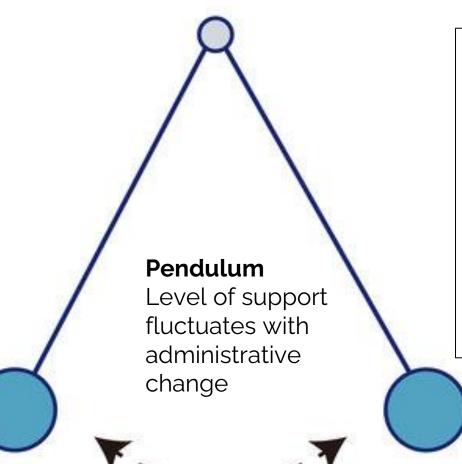


Environmental Policy & Funding Support

Level of environmental policy support & grant funding influences water trading

Low Level of Support

- ESA issues are not pursued
- Federal funding for instream leases is limited
- Less water allocated for environmental purposes
- More water available for diversions / uses
- Regulatory approvals of water projects are faster



High Level of Support

- ESA issues are pursued
- Federal funding for instream leases is increased
- More water allocated for environmental purposes
- Less water available for diversions / uses
- Regulatory approvals of water projects are slower

Other Legal & Policy Changes

- Federal agency budgets
- Federal investments
- Chevron Deference
- ESA Enforcement
- Tariffs & agricultural values
- Fed. Interest rates & housing
- Energy & industrial investments

Questions?

Comments?

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