

# Environmental Water Transactions

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## Paying to Protect & Enhance Water Resources



Sustaining Colorado Watersheds Conference  
October 9, 2019  
Avon, CO



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# OUTLINE

- 1. Need for Environmental Water Transactions**
- 2. Environmental Water Markets in the Western States**
- 3. Colorado Examples**

Photo: South Platte River, USGS



# NEED FOR ENVIRO WATER TRADES

Photo: South Platte River, USGS

# Changing Demands on Water Resources

## Western History

- First water uses / water rights
- Federal reclamation programs



**WATER RIGHTS**

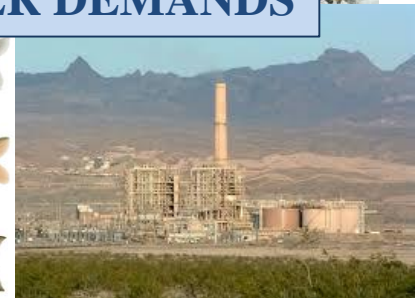
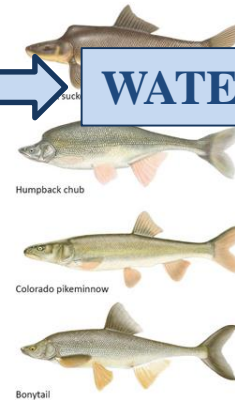


## Western Present

- Developed water supplies
- Changing water demands



**WATER DEMANDS**



# Better Understanding Stream Health

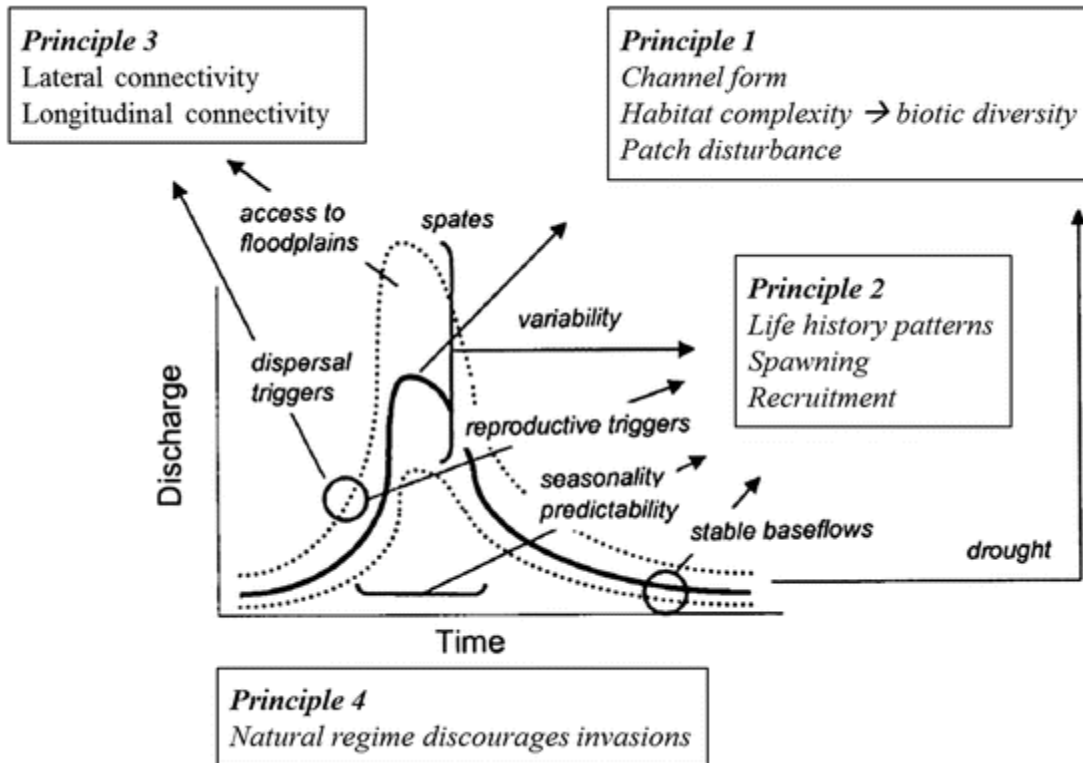
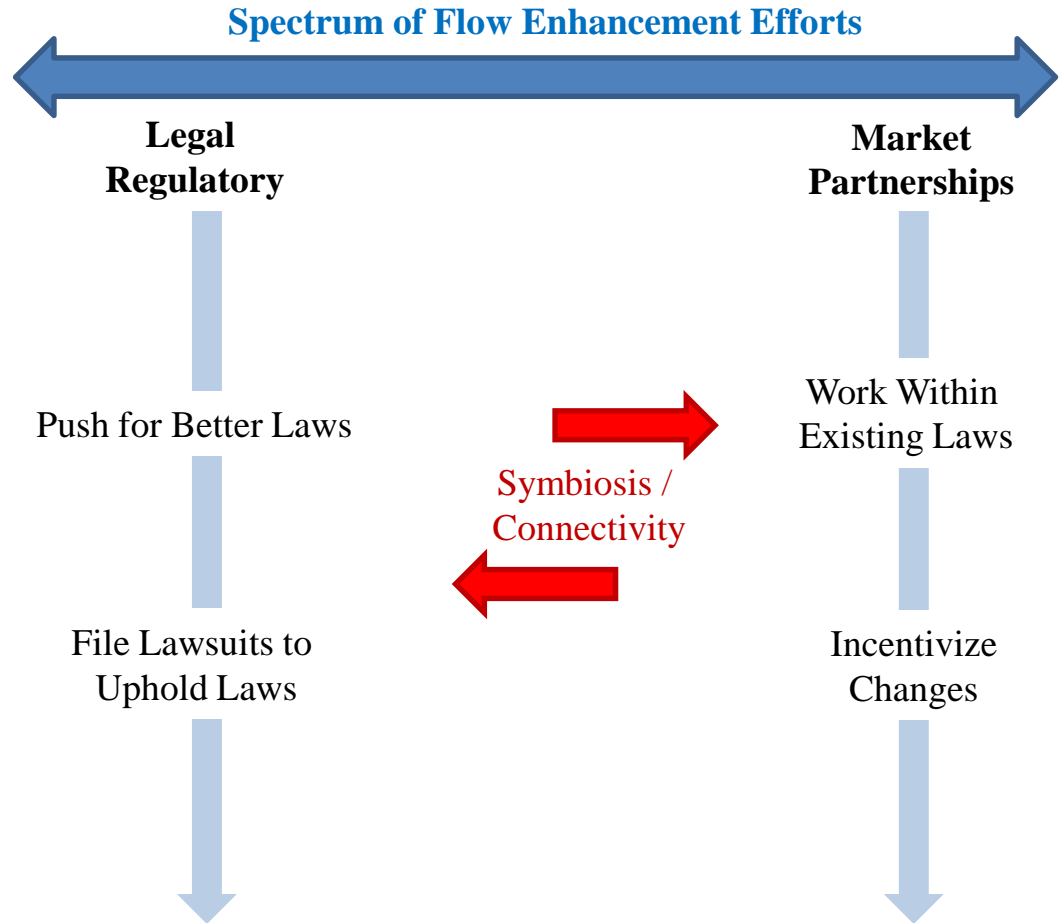
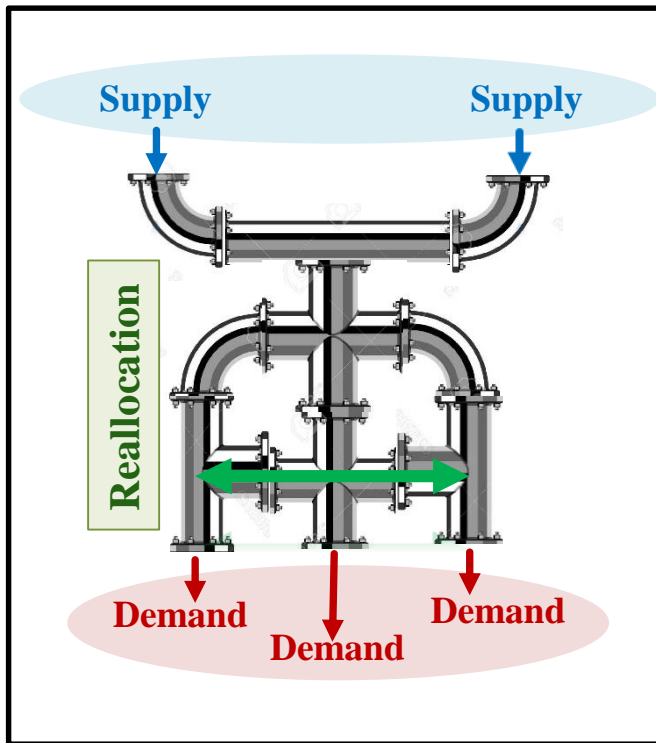


Diagram: Riverine Ecosystem Management, Springer



# Reallocating Water to the Environment





# ENVIRO WATER MARKET IN THE WEST

Photo: South Platte River, USGS

# Enabling Conditions

- In order to have water transactions, **state laws must allow it**
- Stanford inventoried instream flow laws in 2015, we updated in 2019
- State laws continue to evolve with **increasing flexibility** for instream flow agreements & transactions
- **Little correlation between policy elements and transaction activity.**  
Innovation happens in states with limited laws (and vice versa)

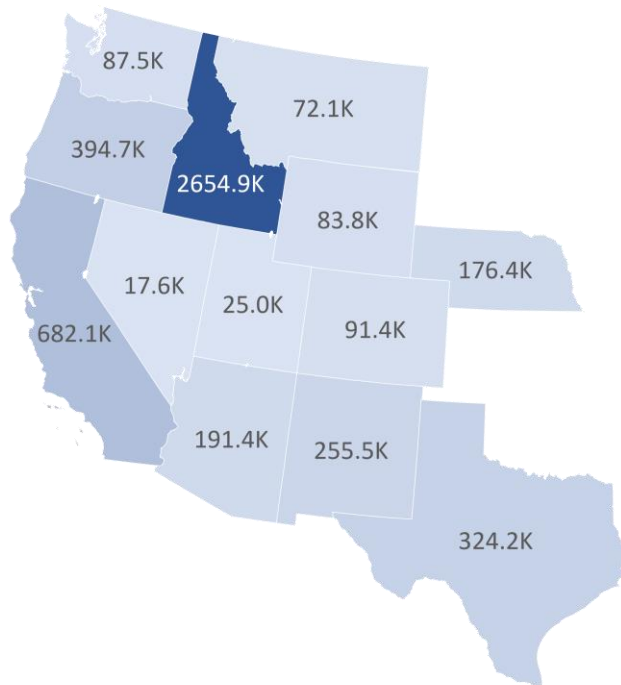


<i>Instream Transfer Legal Elements</i>	<i>Arizona</i>	<i>California</i>	<i>Colorado</i>	<i>Idaho</i>	<i>Montana</i>	<i>Nevada</i>	<i>New Mexico</i>	<i>Oregon</i>	<i>Texas</i>	<i>Utah</i>	<i>Washington</i>	<i>Wyoming</i>	<i>Stanford 2015</i>	<i>WWR 2019</i>
Environmental purpose as beneficial use													12	12
Transfers for instream purposes													12	12
Statutory recognition of transfers													10	11
Private parties can hold instream rights													5	6
Permanent transfer to instream													11	11
Short-term leases & expedited review													8	9
Limitation on environmental rights vs. other uses													6	6
Conserved water to be dedicated for instream flows													5	6
Stacking of environmental use with consumptive use on same right													2	3
Protection from forfeiture for temporary diversion or transfer													5	7
<b>State Totals 2015</b>	<b>4</b>	<b>9</b>	<b>7</b>	<b>5</b>	<b>8</b>	<b>5</b>	<b>5</b>	<b>7</b>	<b>8</b>	<b>6</b>	<b>8</b>	<b>4</b>		
<b>State Totals 2019</b>	<b>5</b>	<b>9</b>	<b>7</b>	<b>5</b>	<b>8</b>	<b>6</b>	<b>6</b>	<b>9</b>	<b>8</b>	<b>7</b>	<b>9</b>	<b>4</b>		



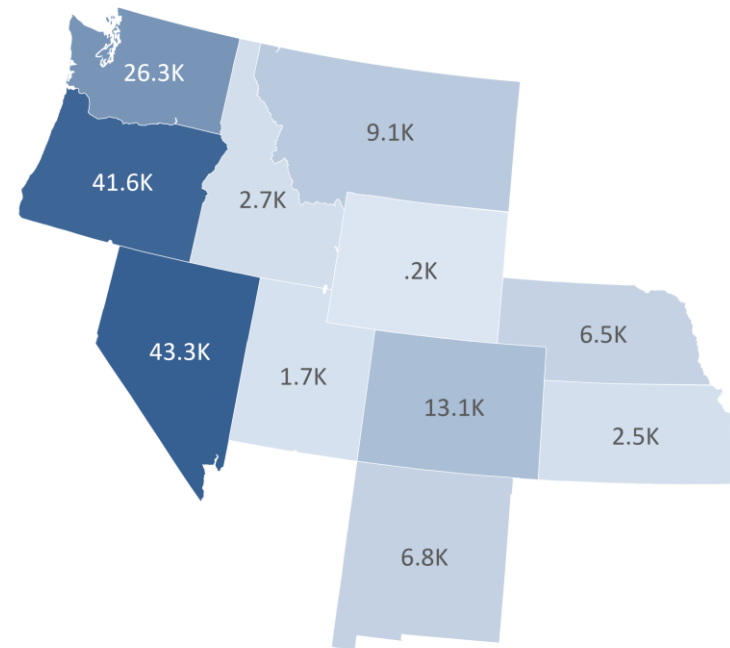
# Market Volume Dominated by Water Leases

Lease Transfers 2008-18 (AF)



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Permanent Transfers 2008-18 (AF)



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## Total Volume: 5,050,000 AF

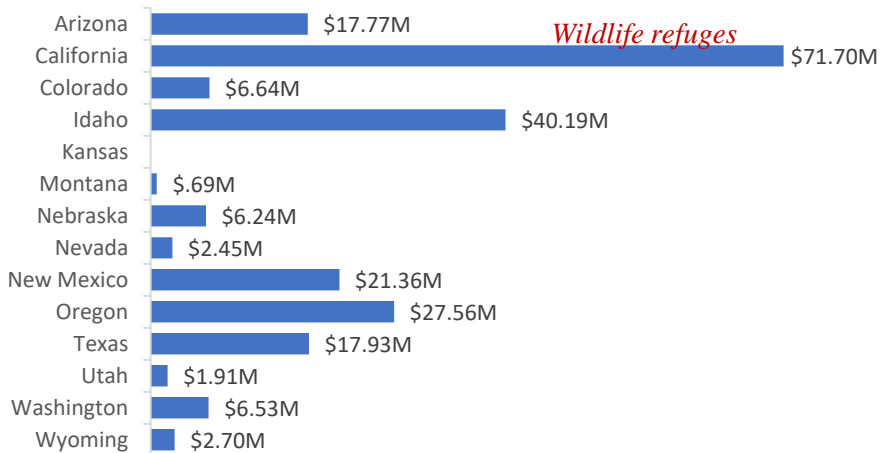
- 27% increase in annual trading volume since 2008
- Huge volume in Idaho (headwater state)
- Environmental leases are 30% of overall water market lease volume (17M AF)

## Total Volume: 154,000 AF

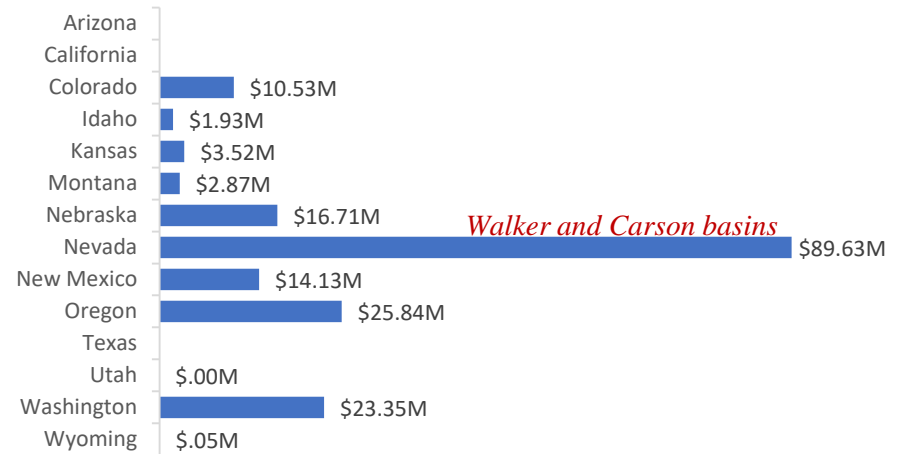
- No sustained increase in annual trading volume
- Focused in Pac NW
- Environmental sales are 7% of overall water market sale volume (2M AF)

# Market Value of \$40M per Year

Leases 2008-18



Permanent 2008-18



## Total Value: \$223.6 million

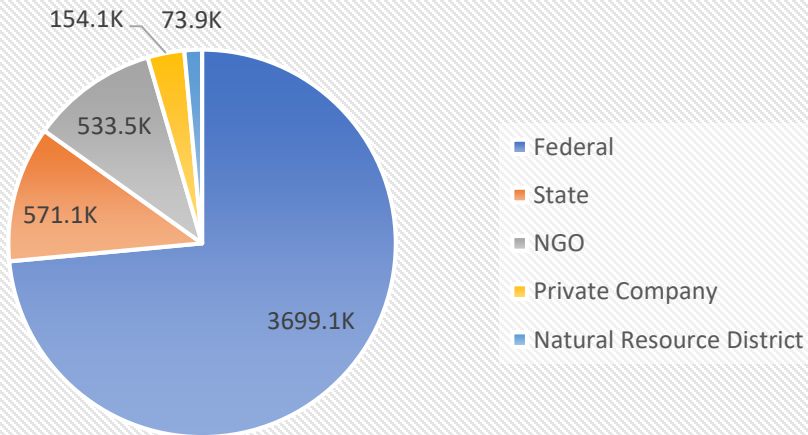
- 35% increase in total value traded
- Average Annual Transfers: 228
- Average Lease Price: varies significantly between states, \$20/af in ID vs. \$200/af in CA

## Total Value: \$188.5 million

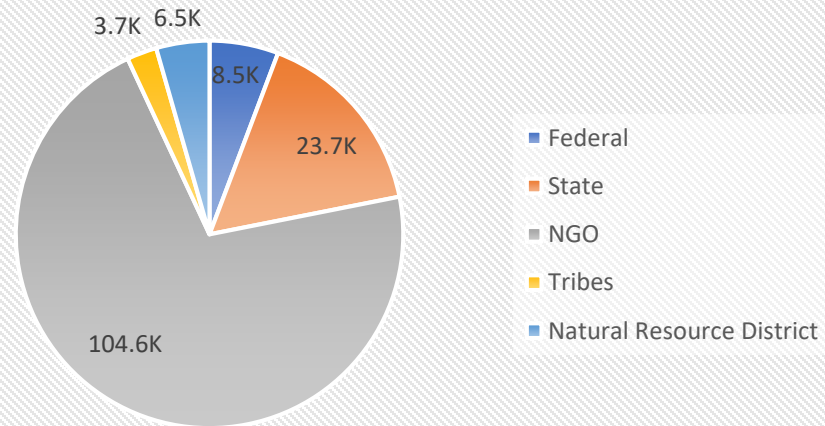
- 17% decrease in total value
- Average Annual Transfers: 39
- Average Permanent Price: often reflects agricultural value, varies from \$300/af in MT up to \$2,500/af in NE

# Who's Buying?

## Top 5 Lease Buyers (AF)



## Top 5 Permanent Buyers (AF)

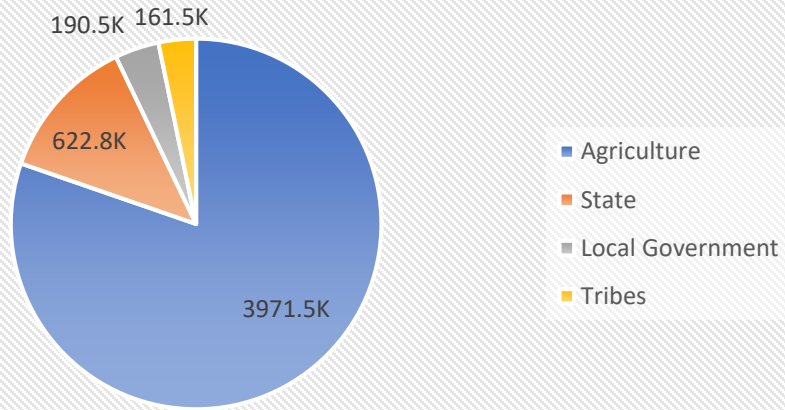


- Federal government dominates lease acquisitions
  - Primarily in ID and CA
- NGOs very active in Columbia Basin WTP
- State NRDs active in NE

- NGOs are the largest buyer of permanent rights
- Majority of state activity for Columbia Basin WTP and New Mexico ISC

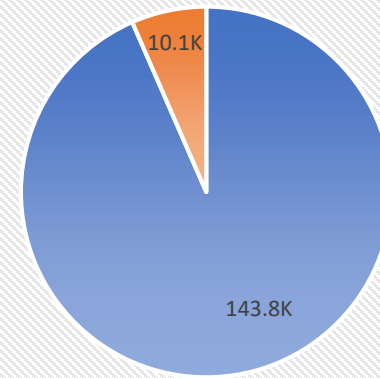
# Who's Selling?

## Top 5 Lease Sellers (AF)



- Agricultural producers & irrigation districts account for 78% of leases
- Private irrigators most active due to CBWTP

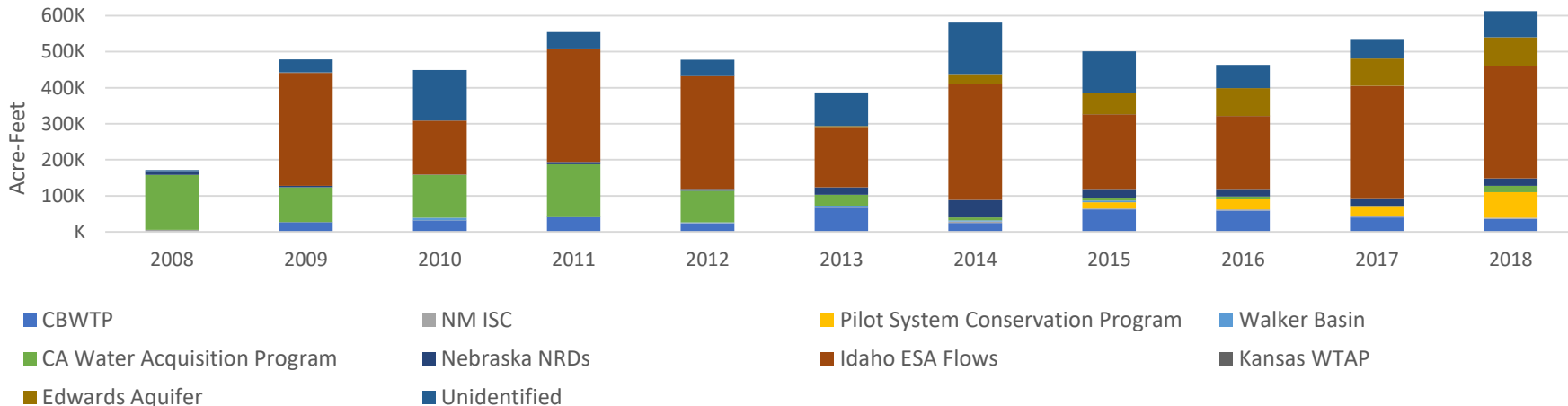
## Permanent Sellers



- Agricultural producers & irrigation districts account for 93% of sales
  - Primarily trade with NGOs
  - Most active in CBWTP and Walker Basins

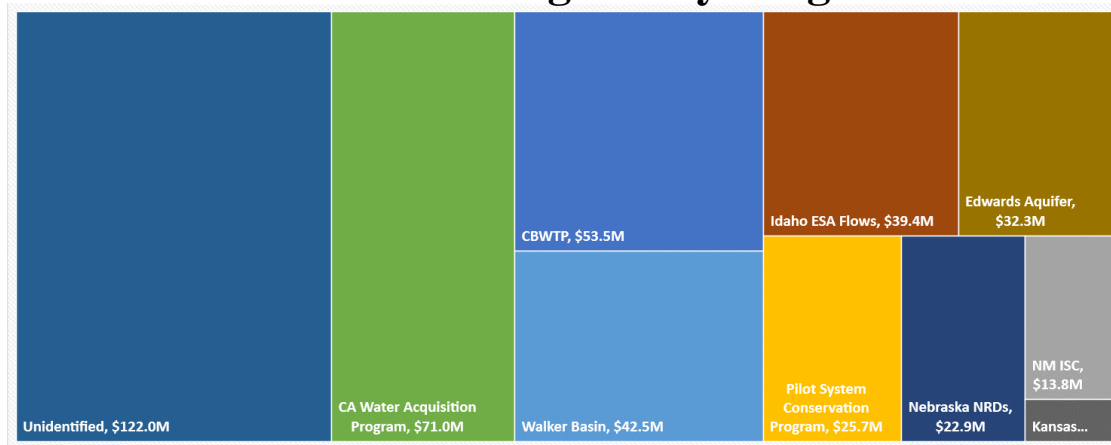
# Market Driven by Regulatory Programs

## Annual Volumes Transferred



**84% of all volume transferred is part of an identified regulatory program or legal requirement**

## Market Value of Regulatory Programs





# Market Take Home Points

## 1. Market dominated by regulatory programs

- 84% of total volume part of a regulatory program or legal requirement

## 2. Market has matured

- Number of unique buyers has more than doubled from 2008 to 2018
- More flexible and innovative deal structures:
  1. New conservation strategies: partial-season fallowing, forbearance
  2. New payment structures: dry-year options

## 3. NGOs are active market shapers

- NGOs active in developing new policies and deal types with limited funding
- Annual volumes are steady, but NGO activity shows fragmentation and innovation
- NGOs are often on front lines of developing transactions in new areas



# COLORADO EXAMPLES

Photo: South Platte River, USGS



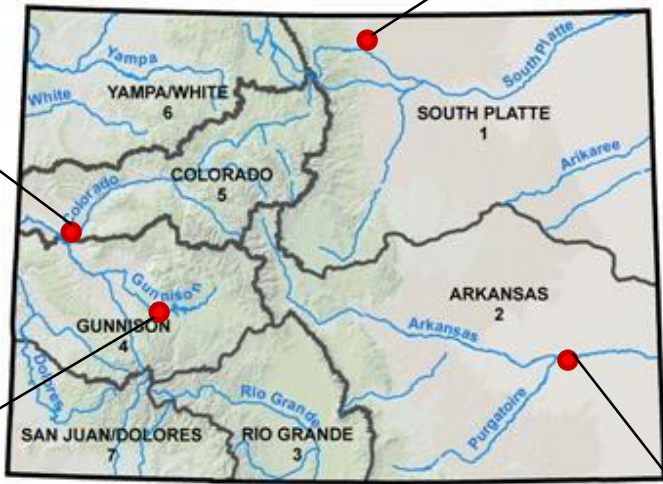
**\$2,000,000**

In 2005, the Bureau of Reclamation and Fish & Wildlife Service entered into a 20-year lease of instream flow water from the CO River District to assist with the ESA Recovery Program



**\$700,000**

In 2013, the City of Fort Collins purchased a 40% stake in the Coy Ditch. This allowed a check dam to be removed improving river connectivity and flood risk in the downtown area



**COLORADO**  
Colorado Water Conservation Board  
Department of Natural Resources

**\$146,000**

In 2015, the CWCB purchased a grant of flow restoration use to use McKinley Ditch rights for instream flow benefit. This grant of use was sold by the Colorado Water Trust based on a split-season fallowing program.



**\$100,000**

In 2015, CO Parks & Wildlife leased water in Pueblo Reservoir from the Pueblo Board of Water Works under an annual RFP process. The storage was released down to John Martin Reservoir for environmental and recreational uses.



# THANKS!

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Photo: South Platte River, USGS