



# Market-Based Reallocation of Water in the Deschutes Basin, Oregon

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# Structure

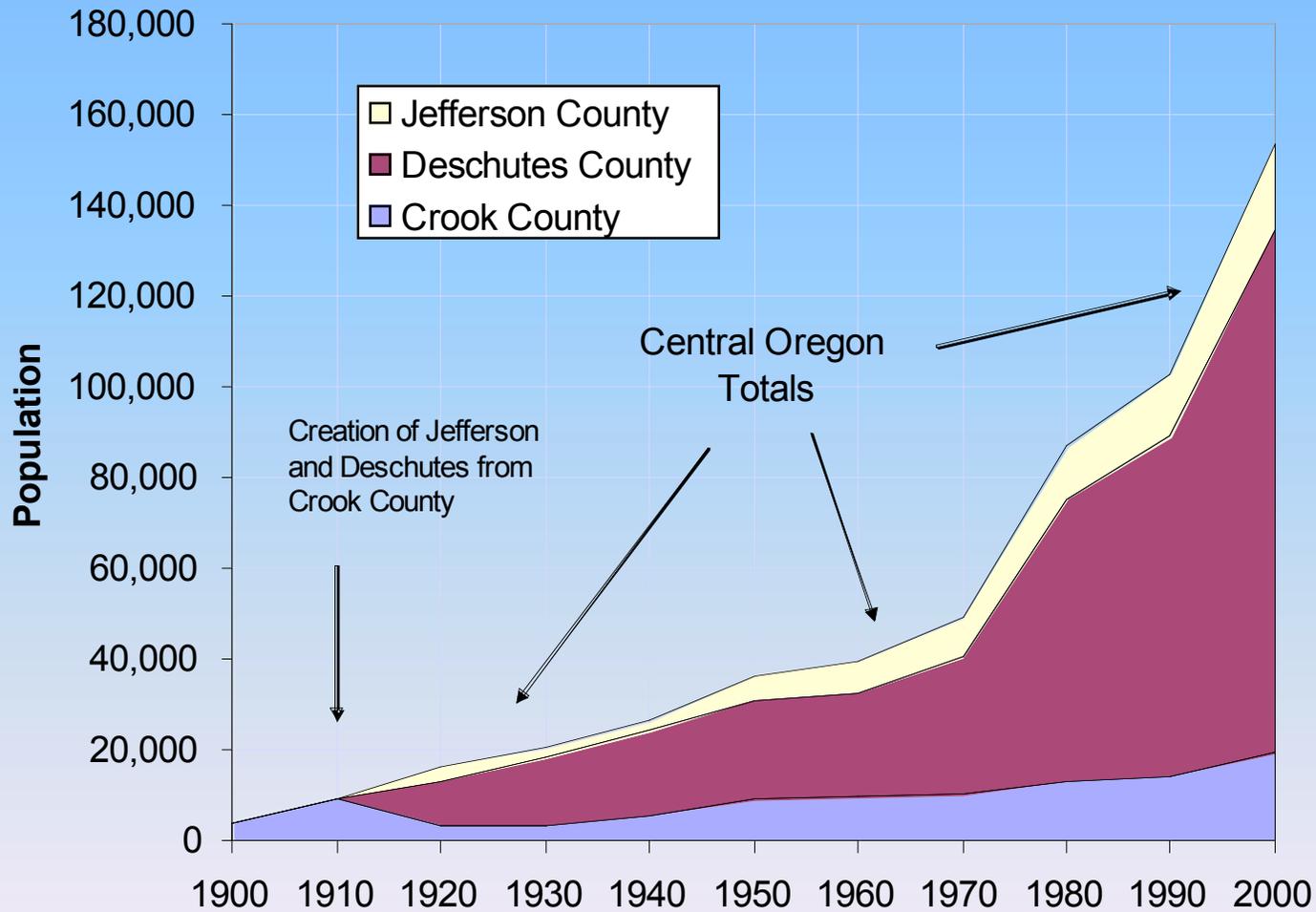
- Where
- Why: Driving Forces and Needs
- Who, What, When: the Deschutes Story
- How: Mechanisms and Process
- Results
- Reflections



## Deschutes Basin & Central Oregon

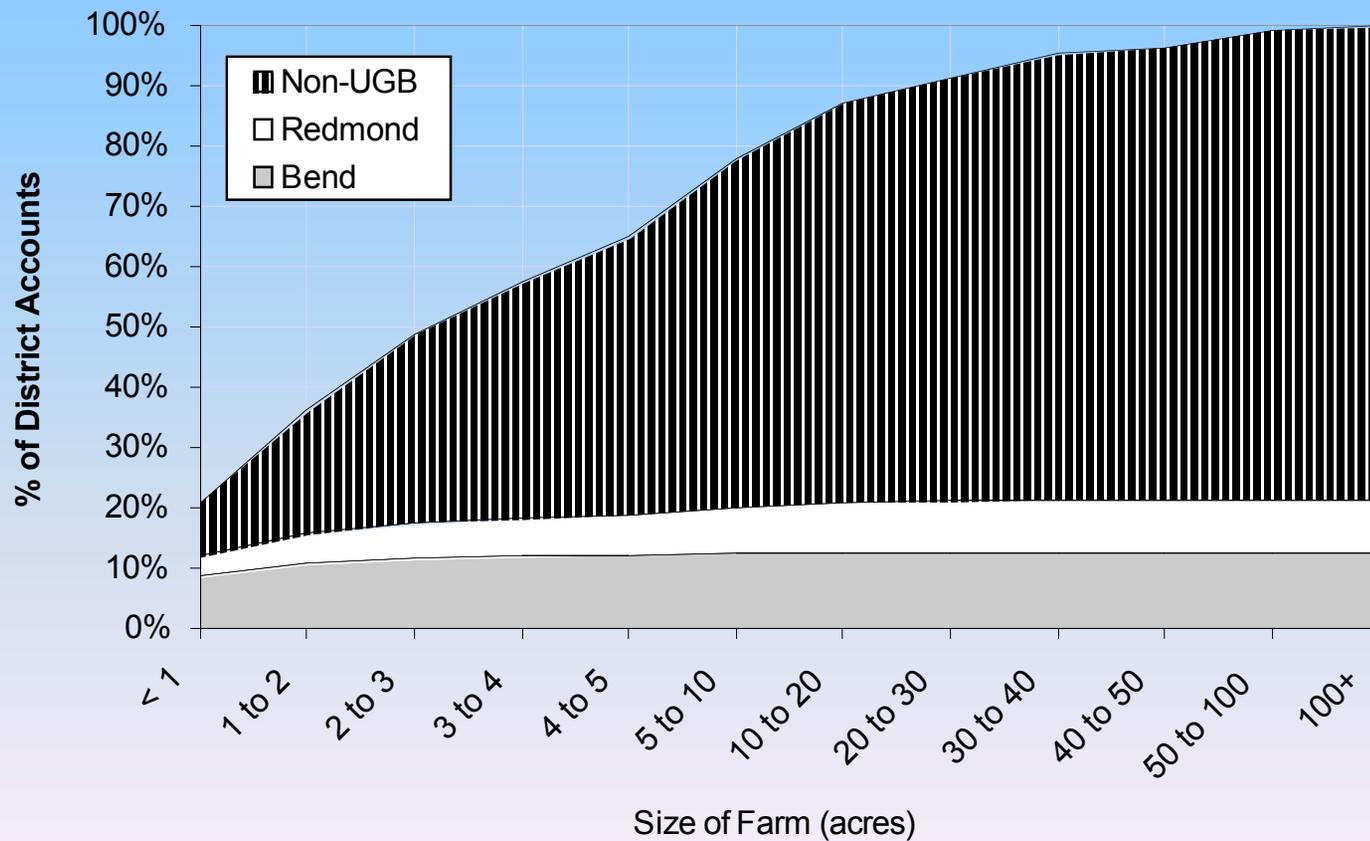
- Rapid population growth
- Growth of 'lifestyle' farming
- Shift to a recreational economy
- Groundwater driven hydrosystem
- Persistent low stream flow & poor water quality
- Reintroduction of salmon to the upper basin

# Population Growth in Central Oregon



# 'Lifestyle' Farming

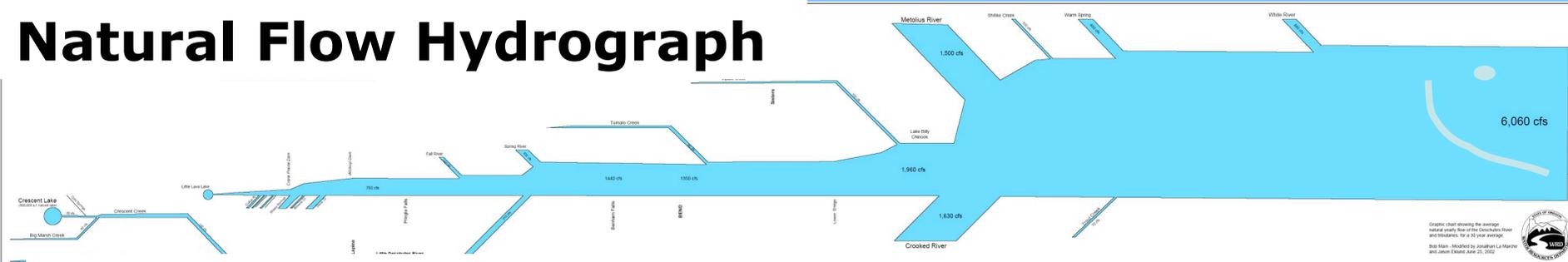
## COID Customer Accounts by Size of Farm



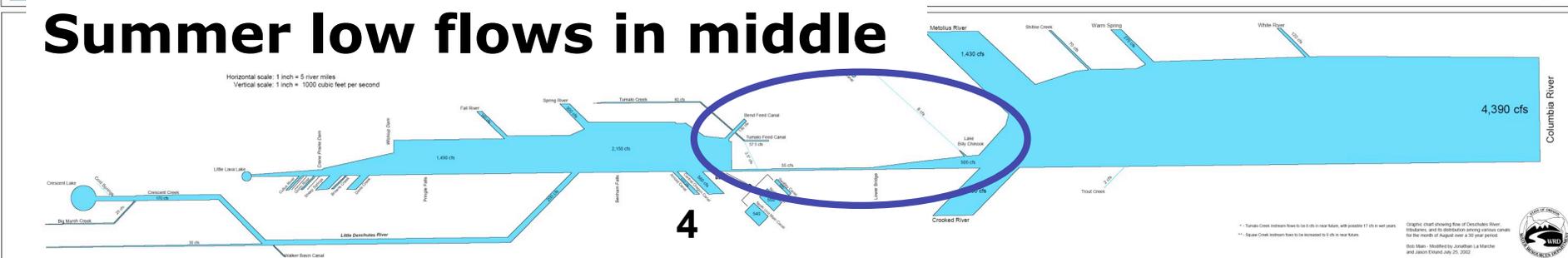
# Low Flows in the Deschutes

(30 yr averages)

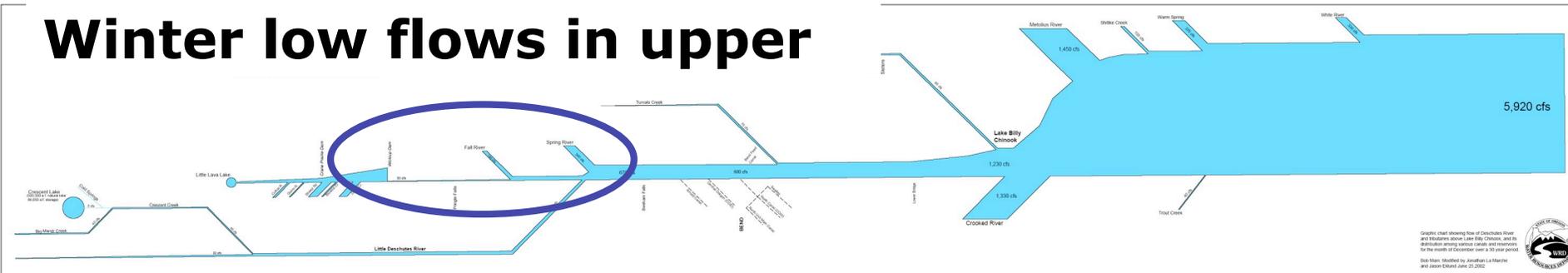
## Natural Flow Hydrograph



## Summer low flows in middle



## Winter low flows in upper



Springs – Lower Whychus Creek



Lower Deschutes River

# Consequences for Water

- Increased demand for groundwater not surface water for human uses (Mitigation Program)
- Increased demand for instream uses
- New Demands not met leads to risk for irrigation districts (end runs and water agents)

# Reflection

- Tailor response and solutions to the problem (don't just copy)



# Who, What, When: The Deschutes Story

# History of Water Use: Deschutes Basin

- 1860's-1913: surface water appropriated
- 1930s: Deschutes Decrees
- 1940's: federal irrigation projects and storage
- 1950s: large dam and hydropower in mid-basin
- 1995: Bend permit protested & GW moratorium
- 1996: Deschutes River Conservancy founded
- 2002: Groundwater rules
- 2002: Deschutes Water Exchange and Groundwater Mitigation Bank created
- 2005-2006: Deschutes Water Alliance (DWA)
- 2006 and on: DWA/Central Oregon Water Ban

# How: Mechanisms & Process



# Types of Transactions

- Those that simply reroute water through the system: water management transactions
- Those that reduce consumptive use (ET)

# Water Management Transactions

- Timing of storage releases
- Point of diversion switch
- Source switch (GW, storage, etc)
- Transmission efficiency
- Water scheduling and distribution
- On-farm water use efficiency



# Consumptive Use and Operational Agreements

- Reducing consumptive use
  - Reductions in irrigated acreage
    - Lease/transfer, partial/full season
  - Reduction in crop water use
- Operational agreements
  - Diversion reduction agreements
  - Minimum flow agreements



# DWA Water Bank

- A cooperative, non-profit brokerage
- A virtual bank – simply coordinates members policies, plans and efforts

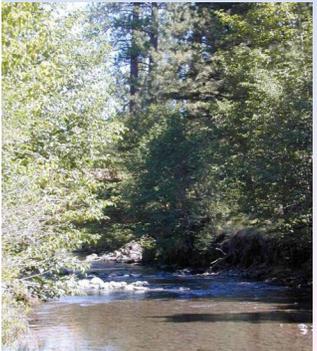
# Characteristics of the Bank

- Voluntary
- Cooperatively-established rules govern bank
- Centralized arena for market info
- Acquires water from sellers, processes and repackages for buyers (new and existing users)
- Temporary and Permanent Reallocation

# Why a Cooperative Buying Program?

- District interests respected – exit fees
- Assure validity and continuity of water rights
- Quality Control – no “damaged” goods
- Reliable and transparent market with stable prices
- Orderly transition in water use

# 'Orderly Transition'



Surface Water

New Uses



Existing Uses

Surface Water

Ground Water

Bank



Bank Sells Water

Bank Buys Water

Instream Water

Urbanizing Land

Problematic Deliveries

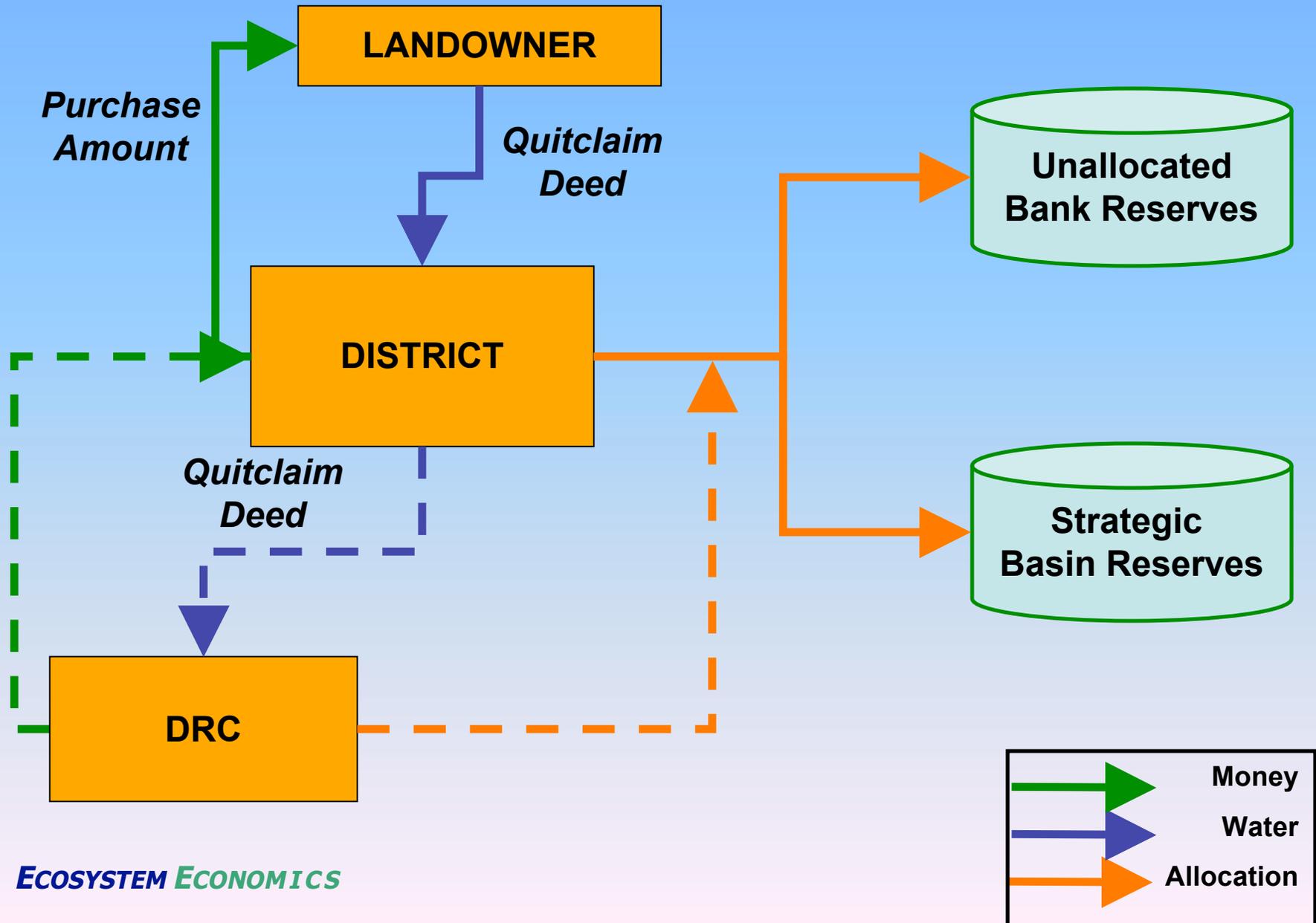
Measure 37 Land

Unproductive Water

"Down-size" Water

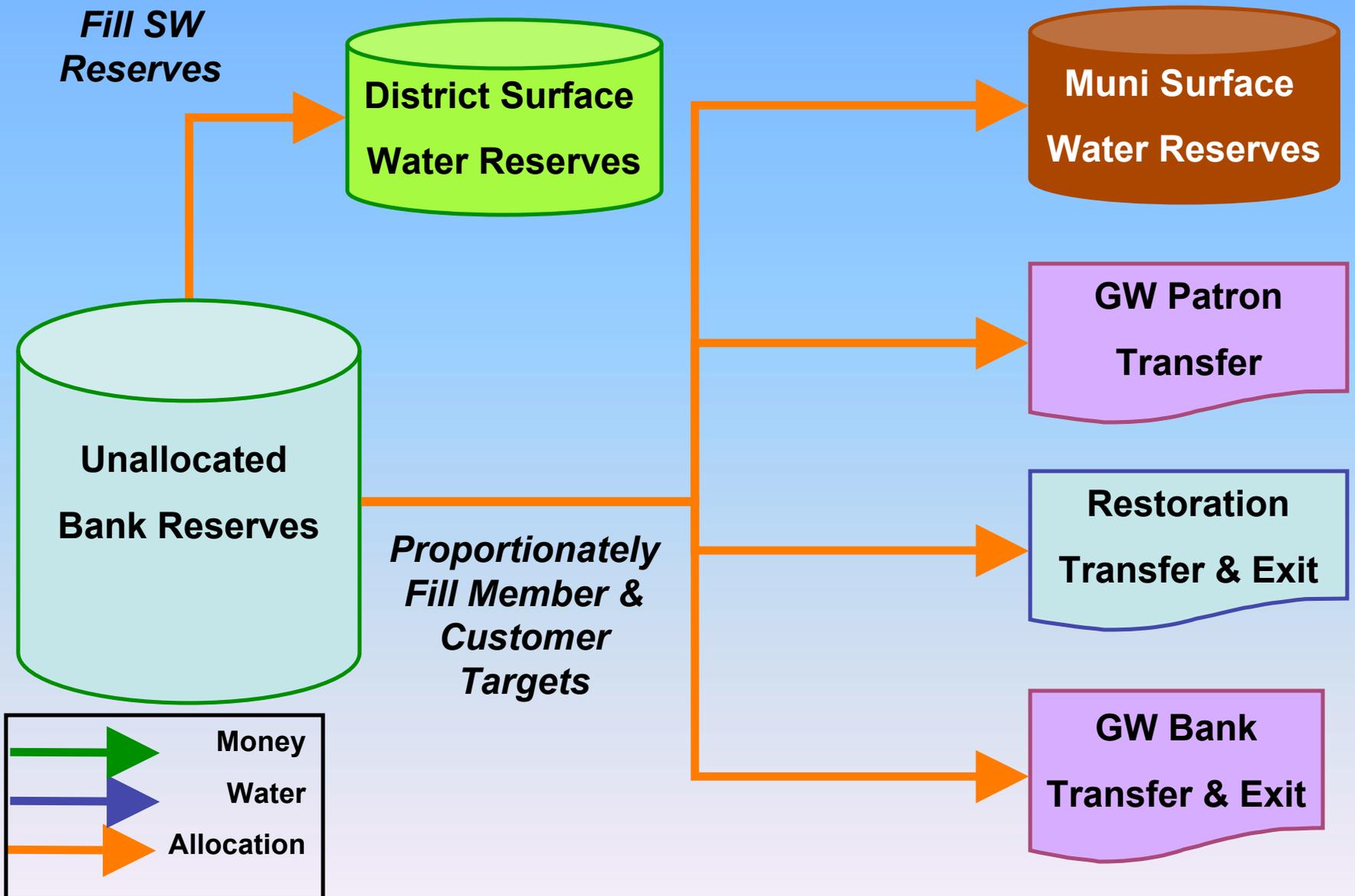
# WATER BANK RESERVES PROGRAM

## Bank Reserves Capitalization During Buying Period



# WATER BANK RESERVES PROGRAM

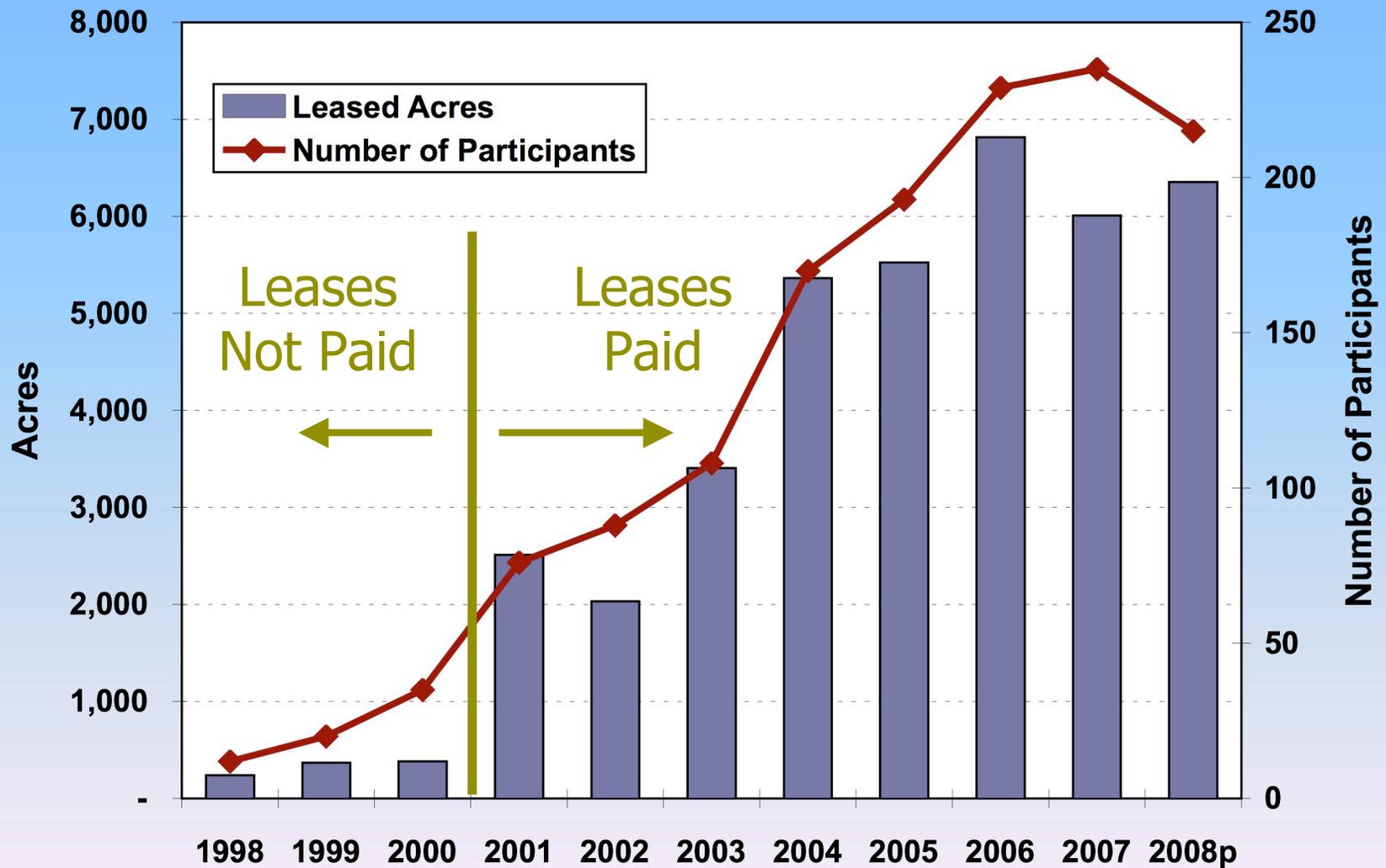
## Bank Reserves Allocation at Settlement



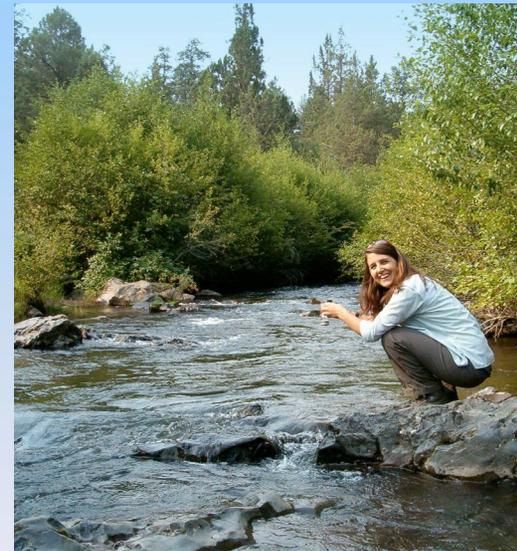
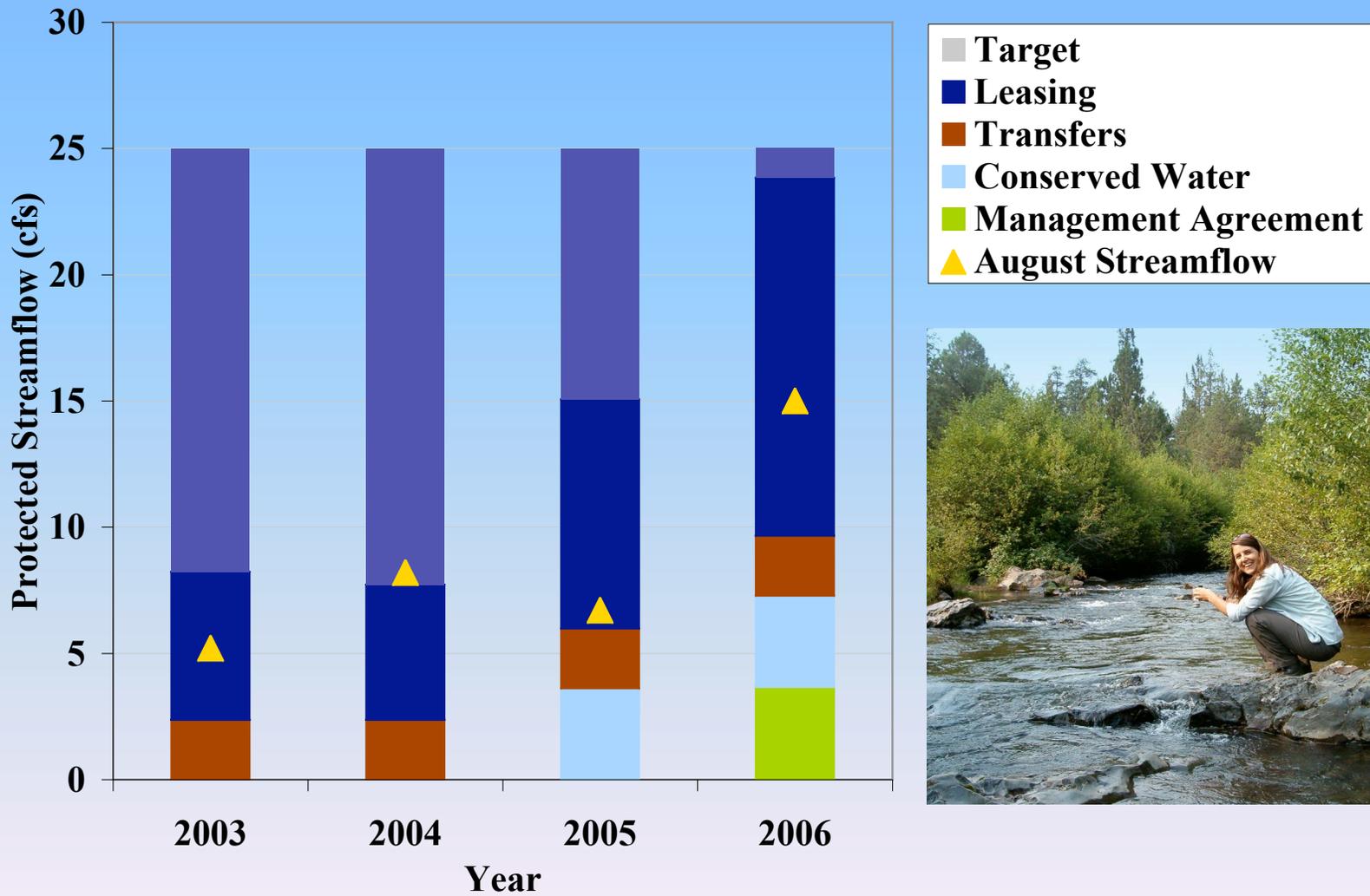


**RESULTS**

# Instream Leasing in the Deschutes



# Whychus Creek



# Whychus Creek

2000



2007



# Advantage of Transactional Approach to Water Reallocation

- Respects existing rights, uses and interests
- Respects irrigation districts operations
- Relies on a willing seller, willing buyer
- Uses existing legal/administrative tools



# Reflections

- Tailor response and solutions to the problem and the objective
- How? Map out Reallocation needs
- Market- *and* trust-based approach
- Call “it” what you want but:
  - A transfer is a permanent change in use
  - An exchange is a change in source
  - Water banking: temporary change in use

# Resources

- Columbia Basin Program @ [www.cbwtp.org](http://www.cbwtp.org)
- Deschutes River Conservancy @ [www.deschutesriver.org](http://www.deschutesriver.org)
- Fall CBWTP Training in water transactions:  
[bruce@ecosystemX.com](mailto:bruce@ecosystemX.com)



**THANK YOU !**