

Water Trends in the High Plains: Economic Implications



Western Great Plains Sustainability Management 2009 Denver, CO

James Pritchett
Agricultural and Resource Economics
Colorado State University
James.Pritchett@ColoState.edu

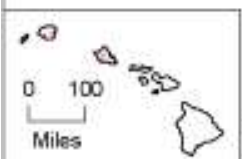
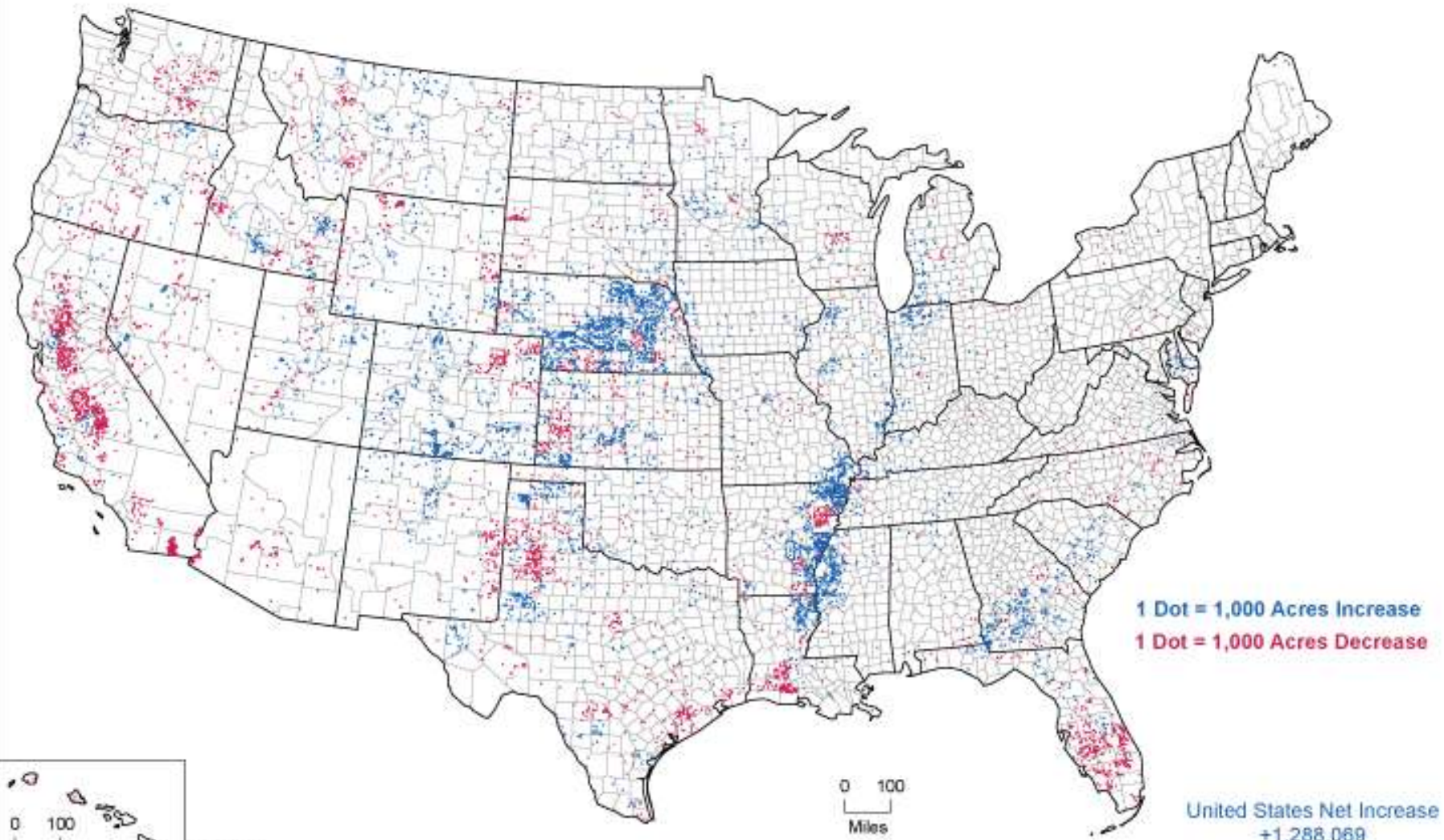


Trends from two perspectives ...

- Regional Economics:
 - What does irrigated agriculture mean to rural communities?
- Farm Economics:
 - What does limited water mean to the farm business?



Irrigated Land - Change in Acreage: 2002 to 2007



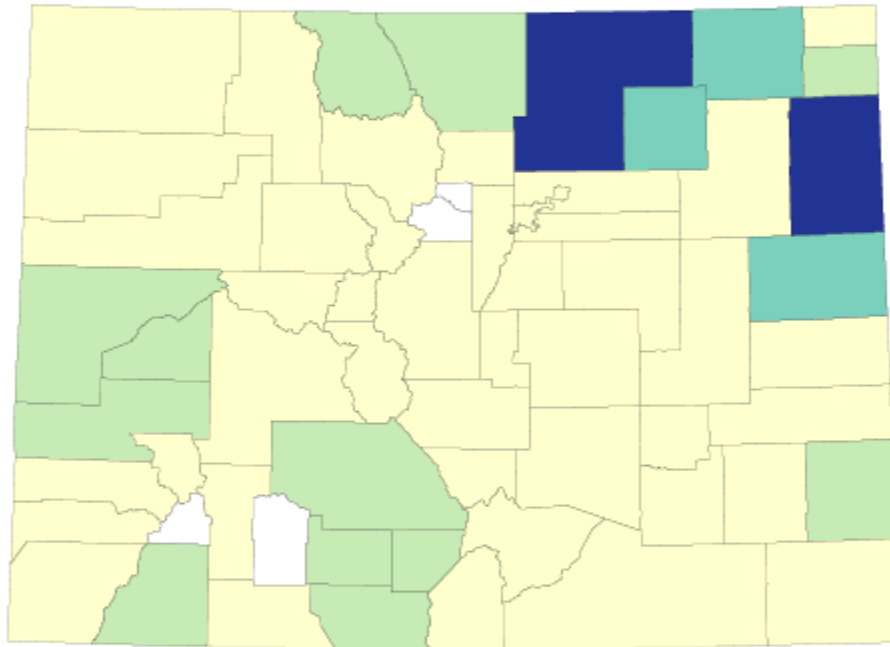
United States Net Increase
+1,288,069

Colorado

All data items are from Chapter 2 - Table 1. Area Summary Highlights: 2002
Irrigated land (acres)

State: Colorado

Data Item: Irrigated land (acres)



Data

State: Colorado
 State Total: 2,590,654
 County:
 County Total:

Download data as [CSV](#) | [XML](#) | [PDF](#)

Help

Print

Return to

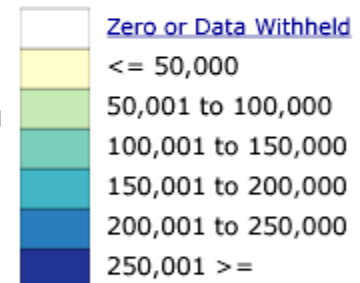
Legend

Scale: State

(Changes the data range based on National or State level)

Comparisons: 6

Color: Blue



2007 Colorado Agriculture Receipts: \$6.4 billion

2007 Colorado Crop Receipts: \$2.0 billion

2007 Irrigated Crops Receipts: \$1.4 billion (estimated)

Economic Activity per Acre

<i>Region</i>	<i>Farm Gate Receipts Relative to Regional Sales^a</i>	<i>Economic Activity Generated per Acre of Irrigated Cropland</i>	<i>Representative Cropping Pattern</i>
Arkansas	31 %	\$428	Forages
Republican	37 %	\$678	Continuous Corn - Alfalfa
Rio Grande	48 %	\$1,127	Potatoes - Barley
South Platte	2 %	\$690	Corn – Alfalfa – Sugar Beets

^aIncludes all production agriculture.

Economic Activity: Irrigated Agriculture

- Direct Activity
 - Crop Sales (Gross Revenues)
- Indirect Effects
 - Fertilizer, Seed, Chemical Sales (but margins only)
 - Transportation
 - Real Estate Services
 - Ag Consultants
- Induced Effects
 - Wages Spent with Local Businesses
- When is generated economic activity high?
 - High value crops sold outside the region.
 - Revenues spent on locally produced inputs.
 - Local support industries use local labor and inputs.

<i>Region</i>	<i>Economic Activity (\$/ac)</i>
Arkansas	\$428
Republican	\$678
Rio Grande	\$1,127
South Platte	\$690



Rural Communities: Where do we go from here?

- Irrigated agriculture is an engine of economic activity.
 - Income is largest for exported goods, local input use.
 - If acres transition, what alternatives exist?
 - What investments might be created?
- Irrigated agriculture provides a property tax
 - Will as many services be needed if acres are retired?
 - Where can the shortfall be made up?



General Managers. vs. Plant Managers

The difference between doing things
right

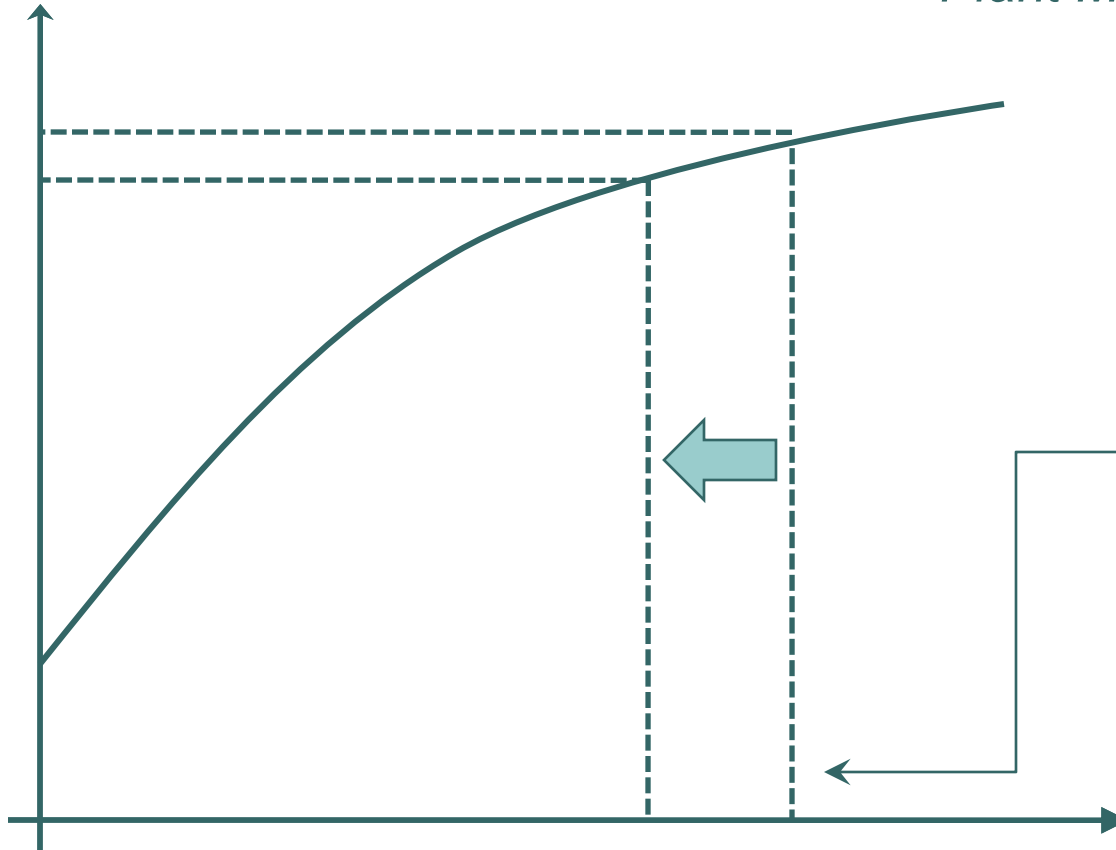
And

Doing the right things

Profit & Water: Specific to the Operation

\$ per ac.

Plant Manager Approach !



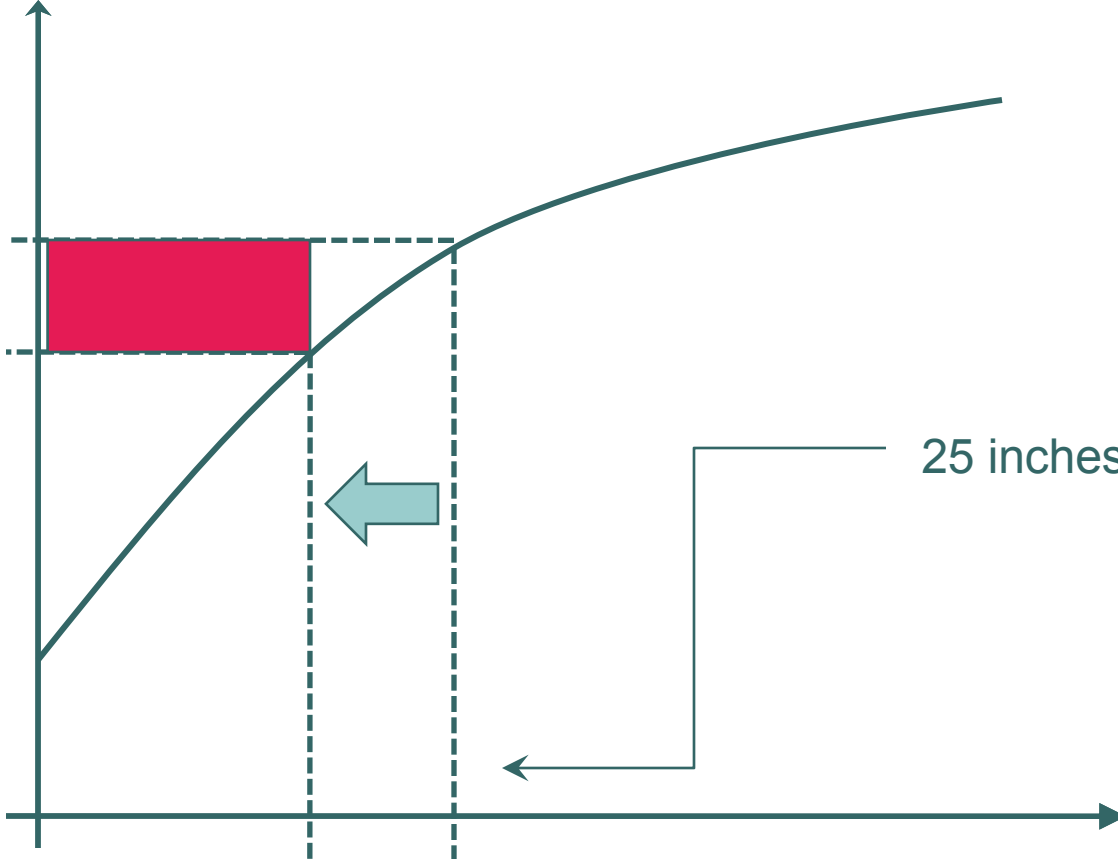
30 inches

Available Water

Profit & Water: Specific to the Operation

\$ per ac.

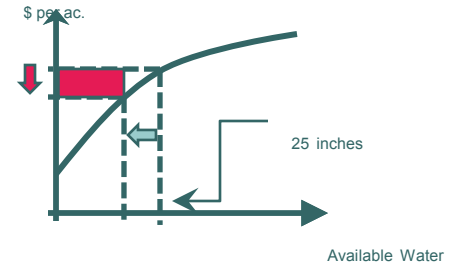
General Manager Approach !



25 inches

Available Water

Profit and Water: General Manager Approach



Reduced Water Challenges

- Scale of Operation
 - Turns (asset efficiency)
 - Earns (cost efficiency)
- Financial Limitations
 - Cash Flow
 - Balance Sheet
- Operational Risk

Reduced Water Opportunities

- Opportunistic Farming
 - System Approaches
 - “Spreading” Water
 - Time Specific Management
 - Transition to Perennials
- Water as a Crop
- New Business Models



Profit and Water: General Manager Approach

- What does the future hold for my farm's water resources?
- How is my farm financial profile changing?
- What reward do I seek for more intensive management?
- What "tipping points" does the farm have for choosing a new strategic direction?