

Dryland Cropping in Colorado



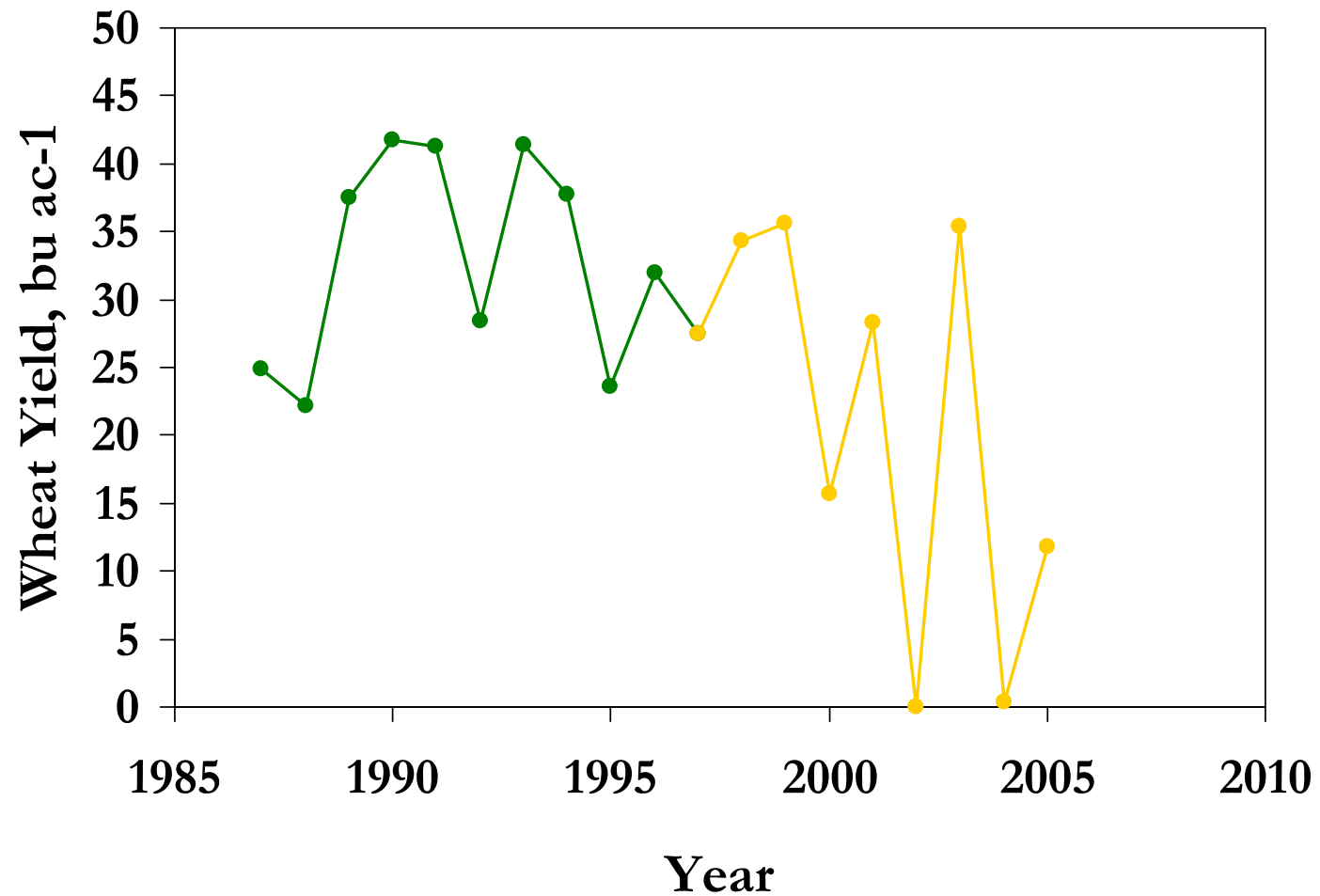
Dryland Farming in Colorado



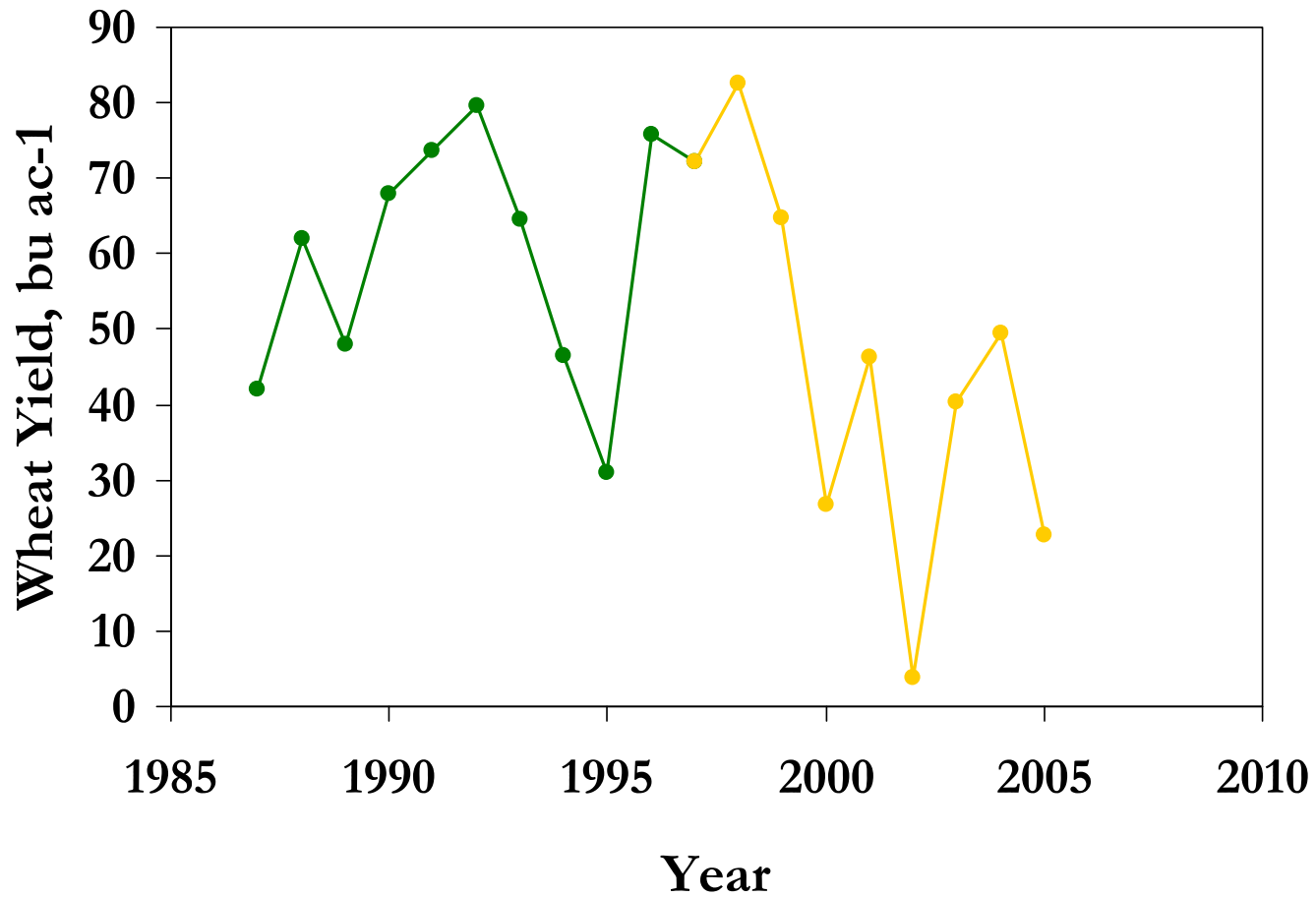
Dryland Farming in Colorado



Variability of Dryland Wheat Yield



Variability of Dryland Corn Yield



Irrigated Cropping Systems



Irrigated Cropping Systems Colorado Western Slope

Wilson Farms – Olathe, CO



Onions
Sweet Corn
Dry Beans



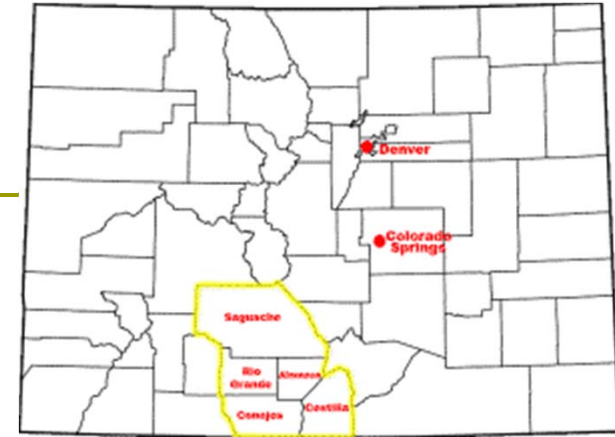












Heersink Farm and Ranch
San Luis Valley

Potatoes
Alfalfa
Barley













Alan and Randy Gerk
South Platte River Basin

Corn

Alfalfa

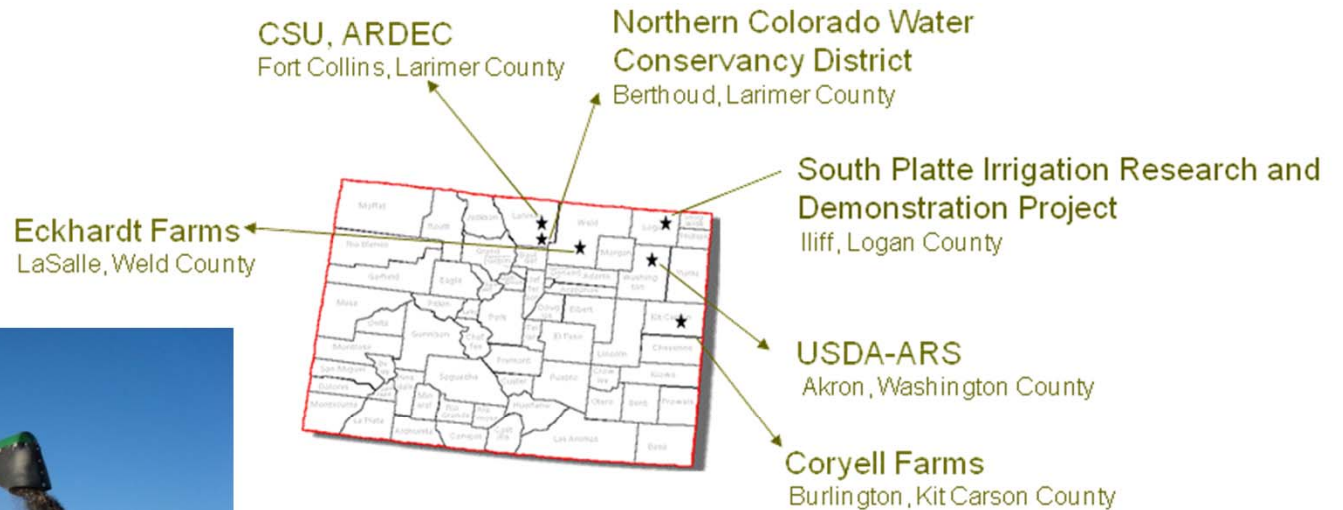
Sugarbeets





Maintaining Irrigated Agriculture

Field research and demonstrations of water conserving cropping systems.



**Example Demonstration Project:
SOUTH PLATTE IRRIGATION RESEARCH
AND DEMONSTRATION at Iliff, Colorado**

Initiated in 2007 with agricultural
and municipal sponsors



Water Conserving Cropping Systems

- ❑ Alternative crop rotations
- ❑ Limited irrigation
- ❑ Partial Season Irrigation



Alternative Crop Rotations

Traditional Irrigated Crops

	Irrigation	ET
	----(in)----	
Corn	17	24
Alfalfa	22	31

Alternative Crop Rotation

	Irrigation	ET
	----(in)----	
Corn	17	24
Soybean	9	19
Wheat	0	12



Alternative Crop Rotations

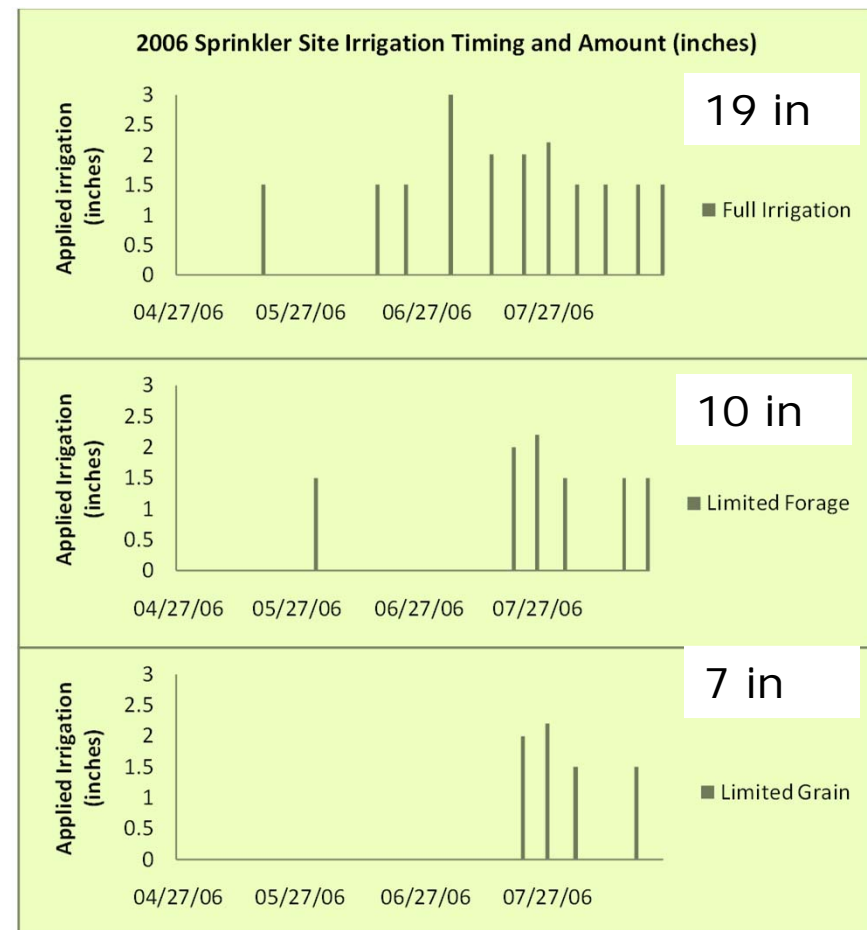
<u>Traditional Irrigated Crops</u>			<u>Alternative Crop Rotation</u>		
	Irrigation	ET		Irrigation	ET
	-----(in)----			-----(in)----	
Corn	17	24	Corn	17	24
Alfalfa	22	31	Soybean	9	19
			Wheat	0	12
<u>Average Annual ET</u>					
28 in			19 in		

Potential for 240,000 gallons/ac of water for transfer to municipal use.

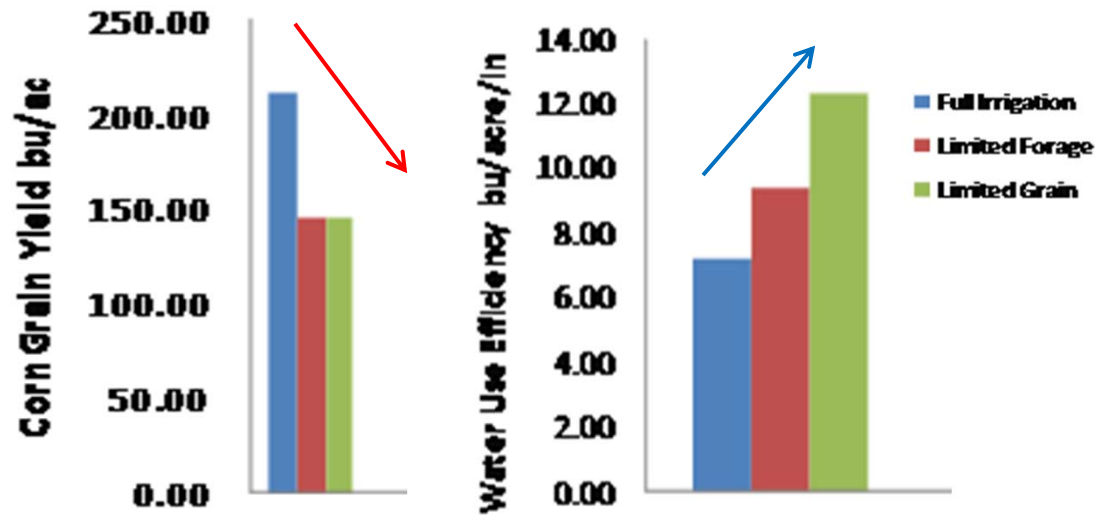
Municipalities to compensate farmers for saved water.

Limited Irrigation Corn

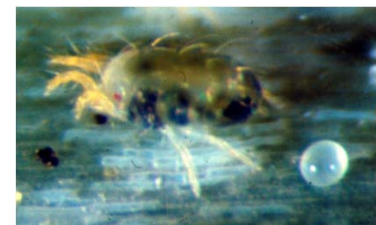
Irrigation amount does not meet full ET demand. Irrigation timed to critical growth stages.



Limited Irrigation for Grain Crops



- Agronomic practices change under limited irrigation
 - Input cost management
 - Variety and Hybrid selection
 - Pest Management



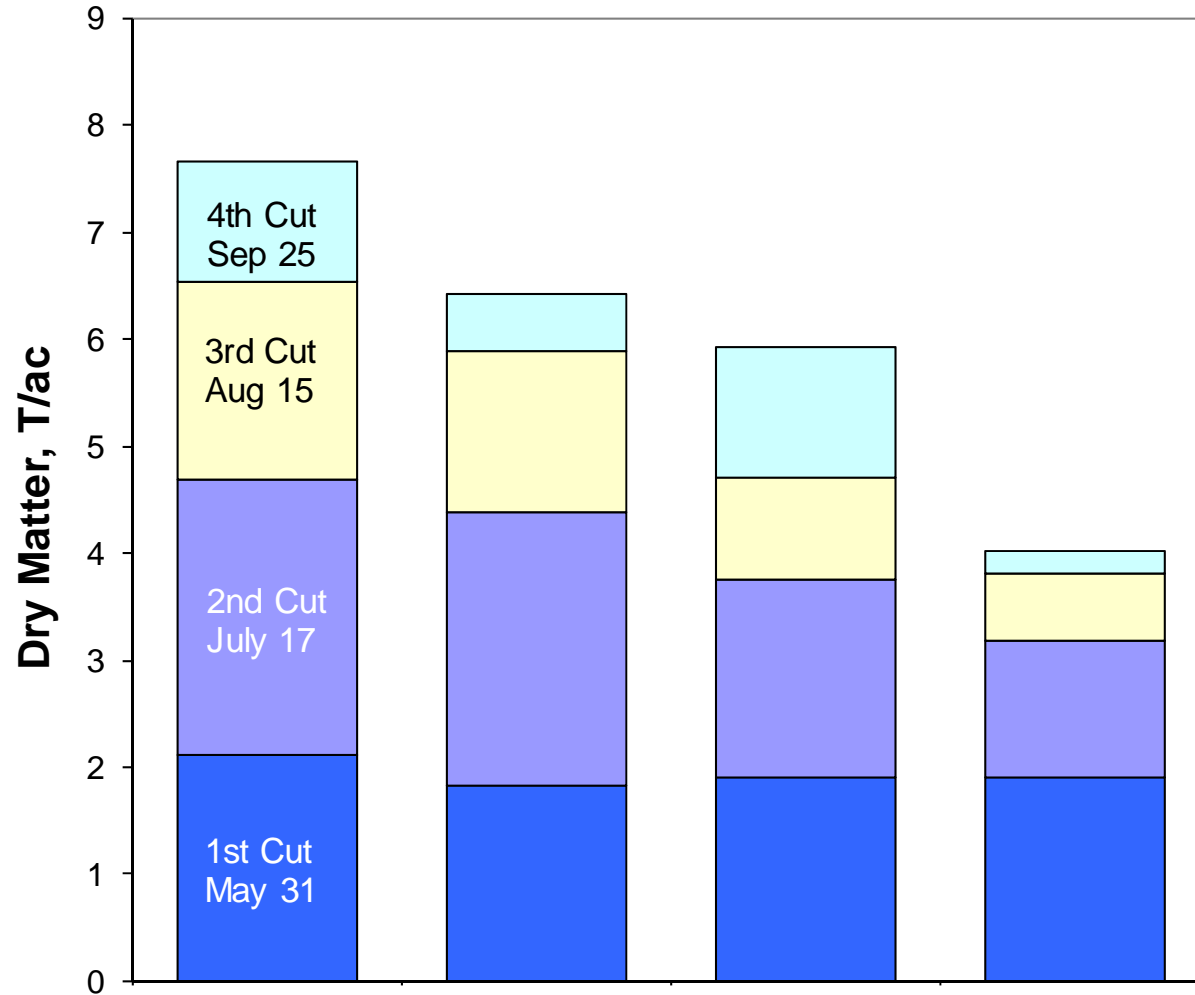
Partial Season Irrigation

- ❑ In-season irrigation termination of perennial crops (i.e. alfalfa).



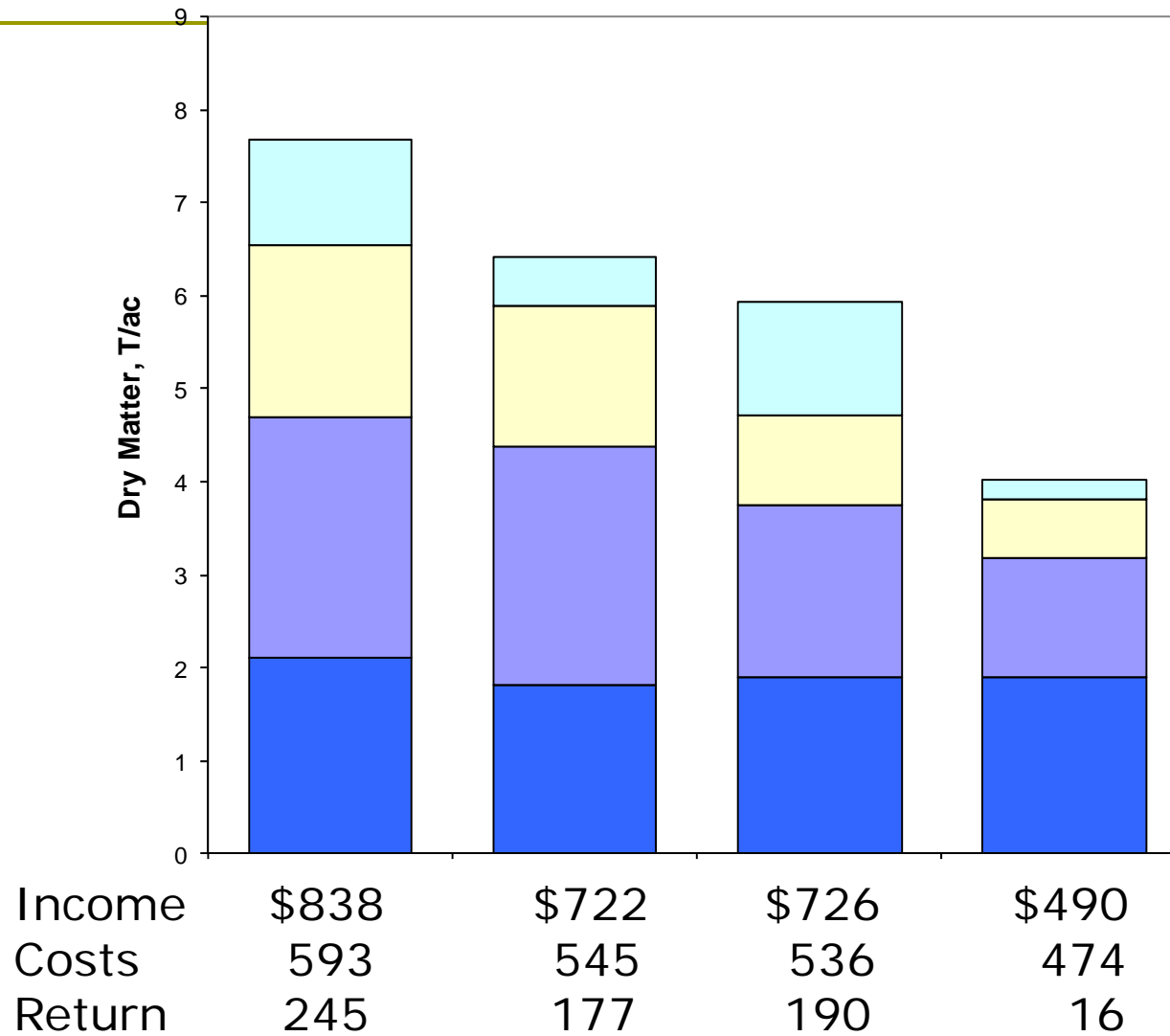
Partial Season Irrigation - Alfalfa

Irrig. (in)	28	14	13	5
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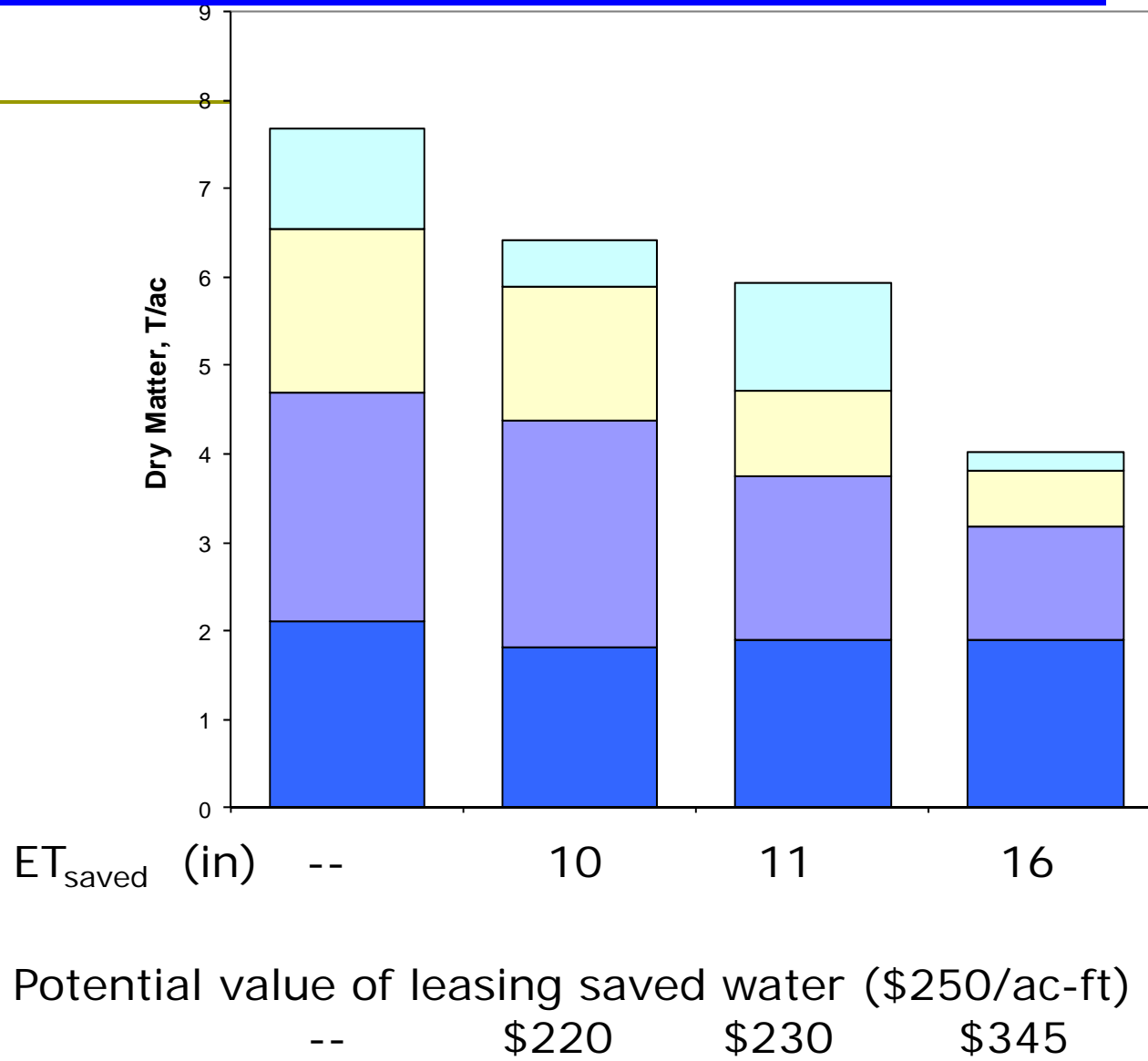


ET (in)	29	16	14	10
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Example Economic Scenario

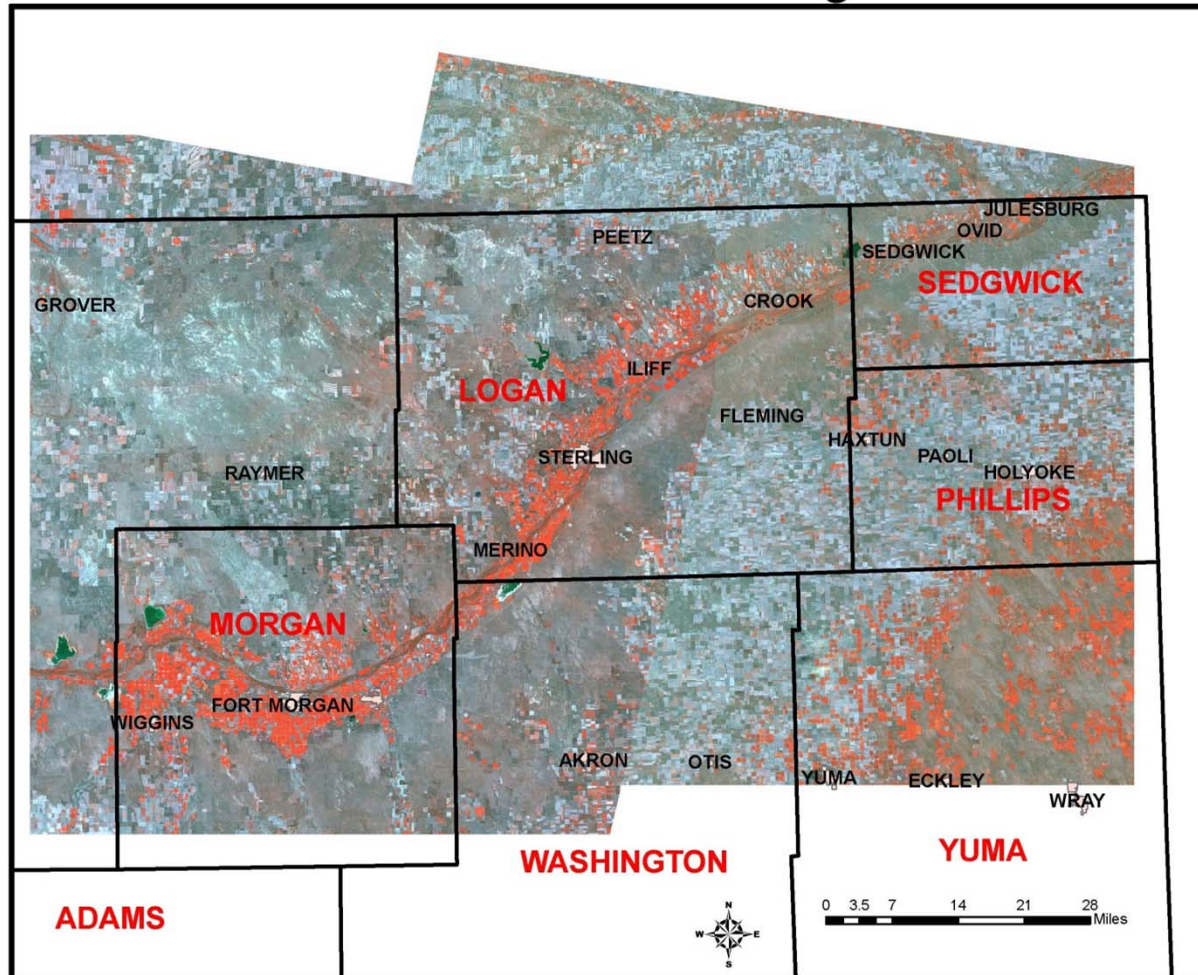


Example Economic Scenario



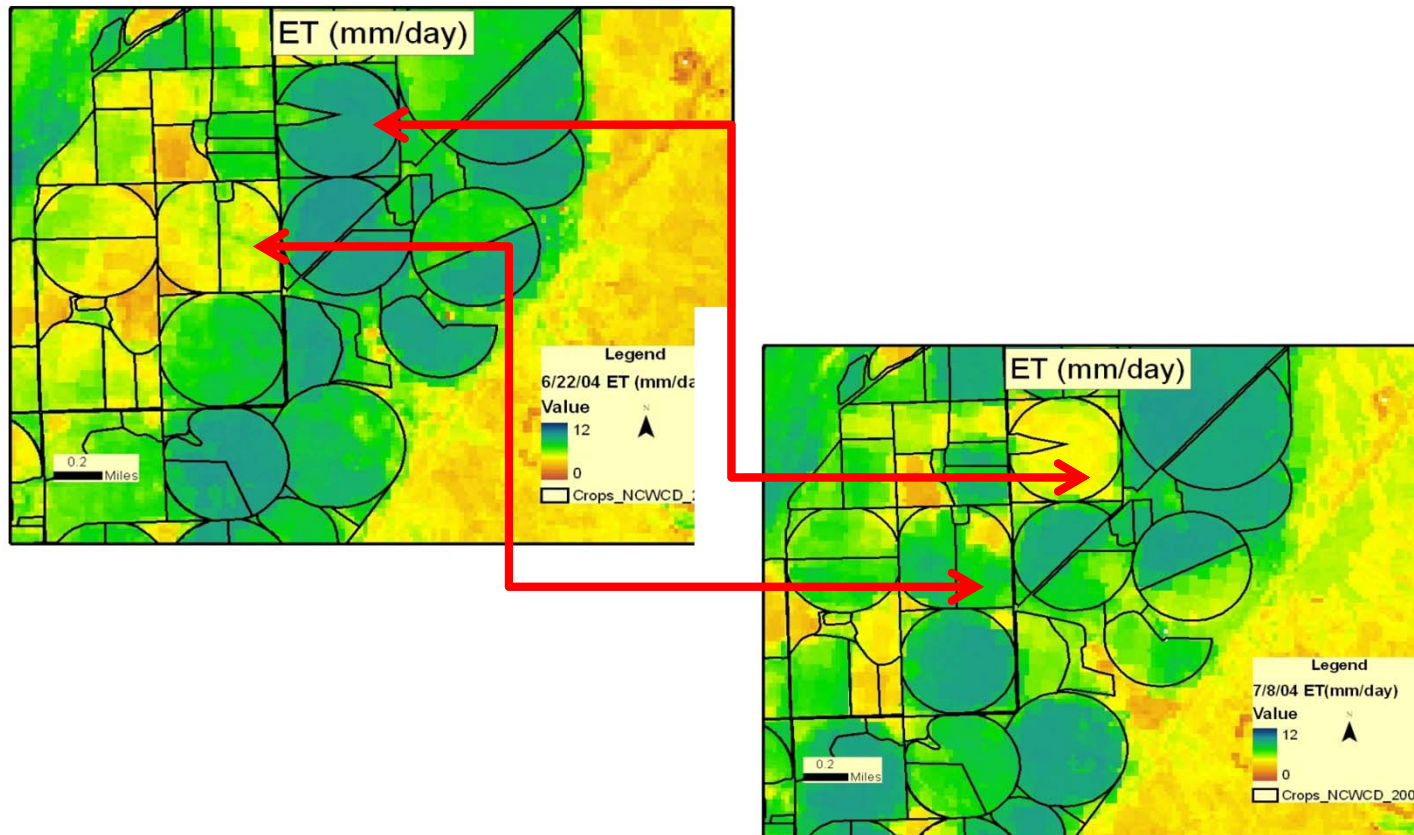
Verification of Saved ET

South Platte Remote Sensing ET Area



Estimating ET Using Remote Sensing

CSU Developed ReSET method (Remote Sensing of ET)



General Observations

- ❑ Potential water savings from alternative crop rotations and limited irrigation of grain crops
- ❑ Largest water savings – conversion to dryland or rotational cropping
- ❑ Least cost water savings from partial season irrigation of alfalfa
- ❑ Management and risk increase with reduced irrigation

For More Information

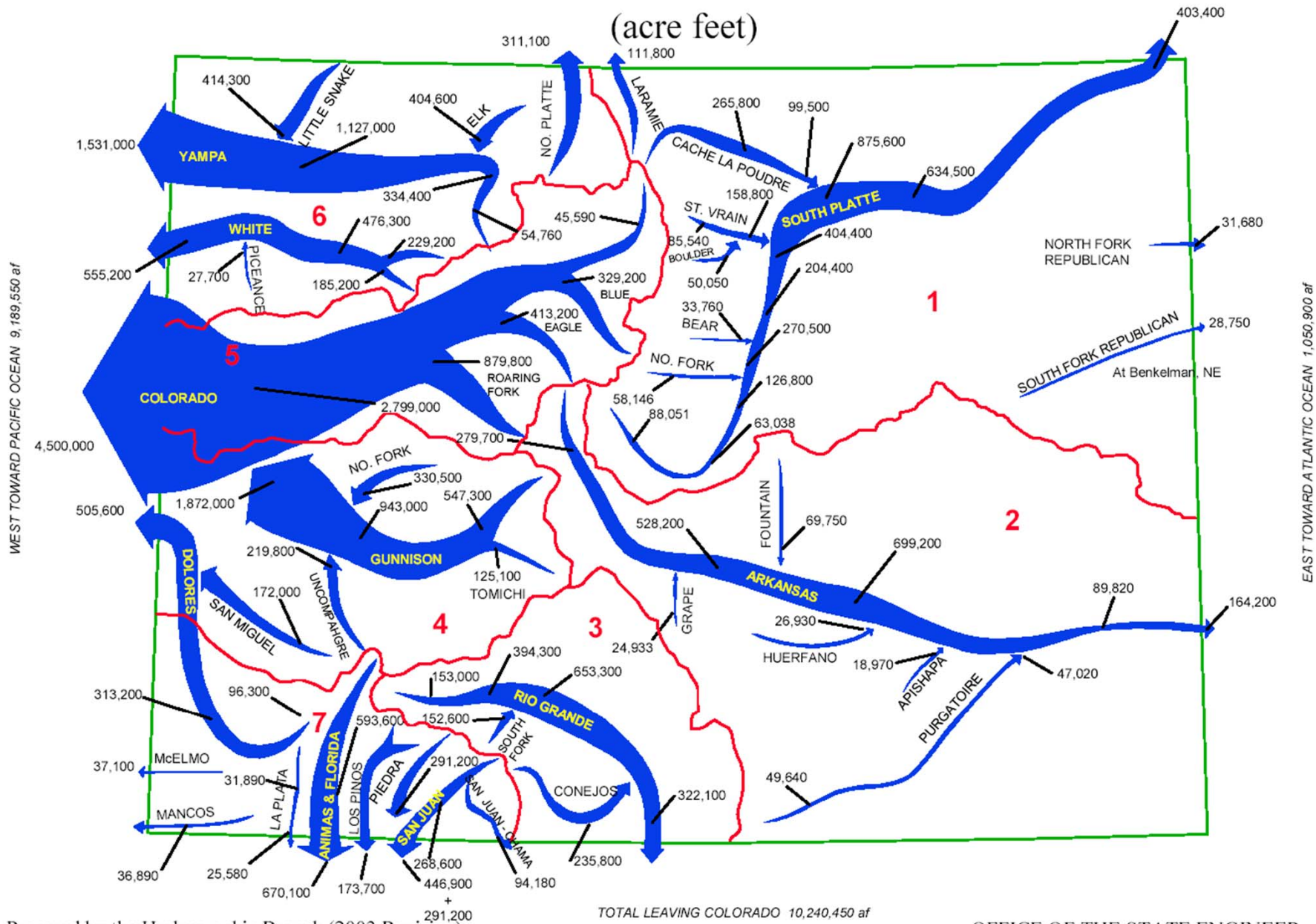
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COLORADO

HISTORICAL AVERAGE ANNUAL STREAM FLOWS

(acre feet)



Prepared by the Hydrographic Branch (2003 Revision)
 Historic averages obtained from USGS Water-Data Report CO-02

OFFICE OF THE STATE ENGINEER
 COLORADO DIVISION OF WATER RESOURCES