Of Primary Importance: Secondary Economic Impacts of Demand Management on West Slope Communities

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COLORADO RIVER DISTRICT
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SOL PADDLE BOARDS

Studies Completed

- Water Bank Feasibility Study (Phase I)
- Water Bank Feasibility Study (Phase II)
- Water Economic Panel Discussion
- Qualitative Assessment of Water Banking (Phase IIB)
- Assessment of Agricultural Consumptive Use
- Agronomic Responses to Partial and Full Season Fallowing Alfalfa and Grass Hay
- Memorandum: Review of Available Research on Deficit Irrigation
- Tech Subcommittee Working Paper: Potential Options for Demand Management in CO
- Impacts of Split Season Irrigation on Forage Yield & Quality, Carryover Effects, and Varying Split Season Irrigation Regimes
- Compact Water Bank Pricing
- 2016 Webinar Series: Field Studies, Remote Sensing, Soil Health Implications, Specialty Crops, Role of Irrigation Efficiency
- Testing Mechanisms for Conserved Consumptive Use via Pilot Projects (GVWUA)
- Colorado River Compact Water Bank Reconnaissance Study

What we know & don't know

- One size does not fit all
- Compact curtailment will cause significant social and economic impacts
- Decision to participate not just about economics
- Impacts go beyond immediate location
- Shepherding and administration
- Water Marketing Pricing
- Full or partial fallowing appears to be more feasible for annual crops
- Alfalfa is resilient and adapts to irrigation stress
- Deficit irrigation high elevation grass pasture possible
- Deficit irrigation regimes impacts overall yield
- Flexibility in period of potential participation
- Agreed upon method for measuring CCU
- Avoiding a crisis response critical


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DEMAND MANAGEMENT IN WESTERN COLORADO:

A SECONDARY ECONOMIC IMPACT STUDY

Presented by Doug Jeavons
Managing Director

BBC RESEARCH & CONSULTING

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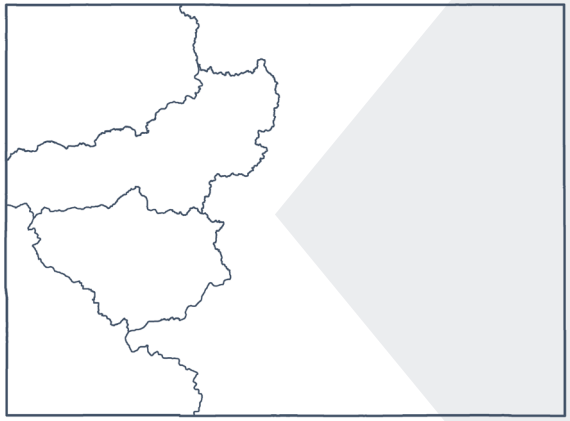
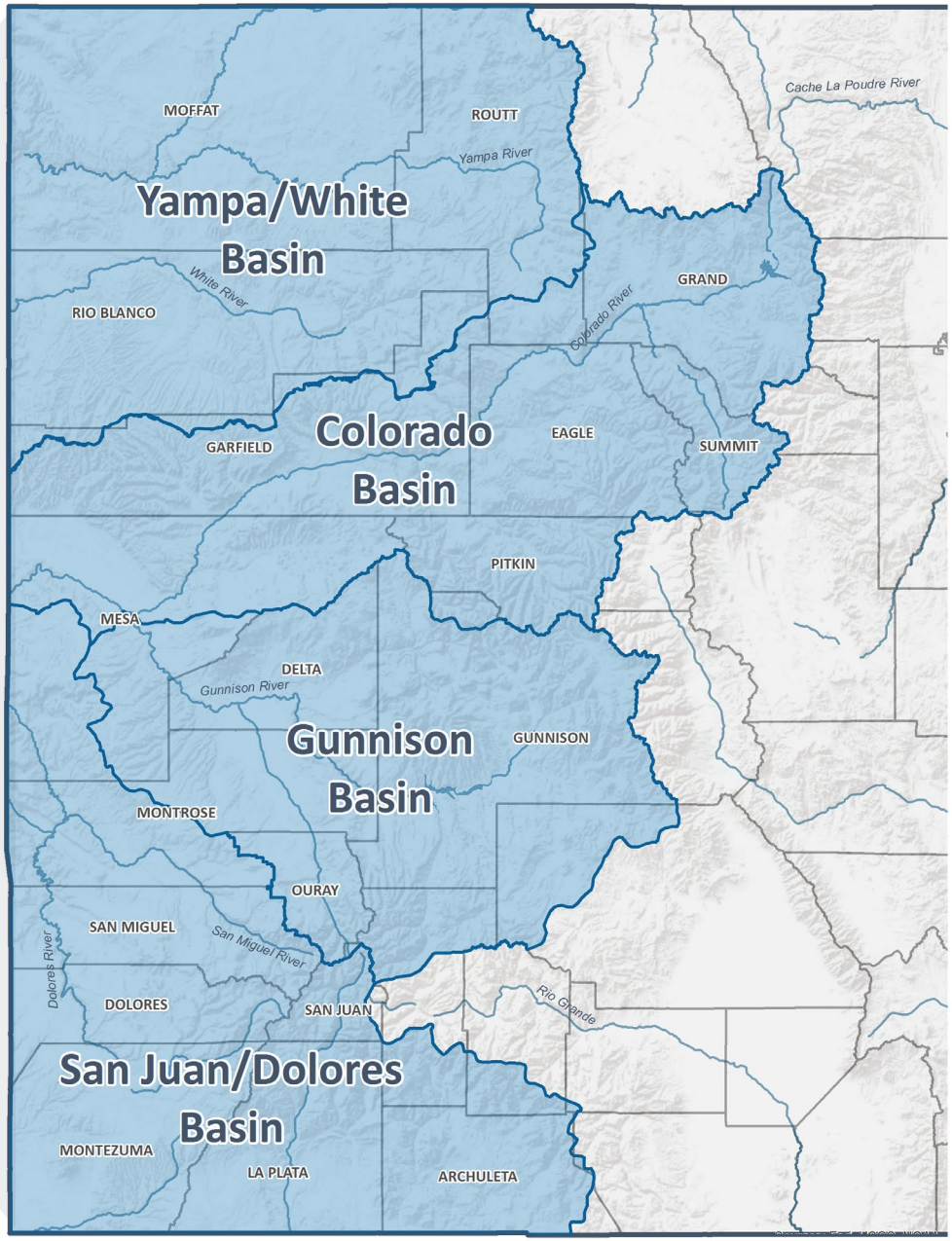
STUDY AREA BASINS

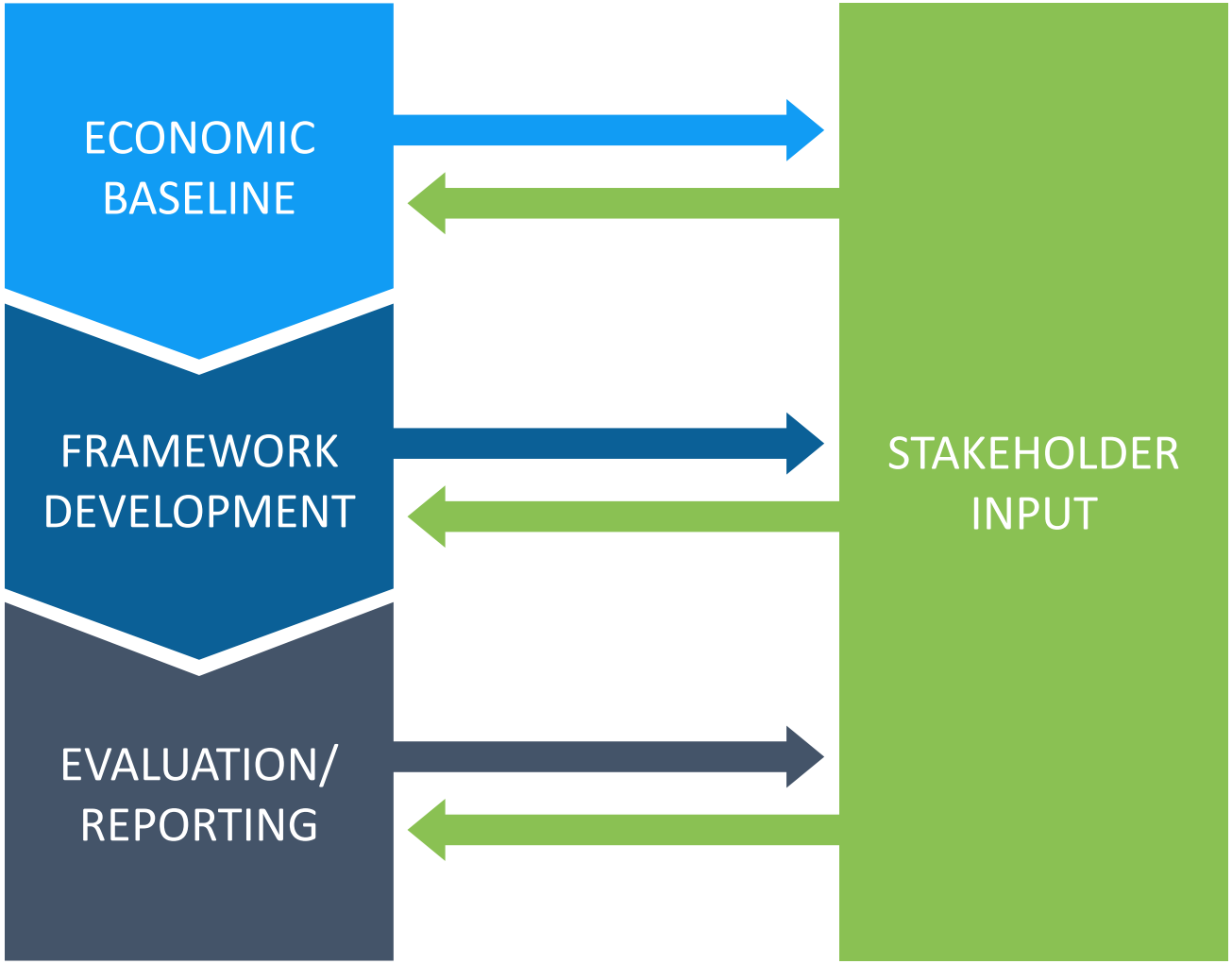
COLORADO





* The San Juan/Dolores Basin is referred to as the Southwest Basin in the study.

STUDY ELEMENTS



A FEW INSIGHTS

FROM THE

ECONOMIC BASELINE

MANY FARMS, NOT SO MANY FARMERS

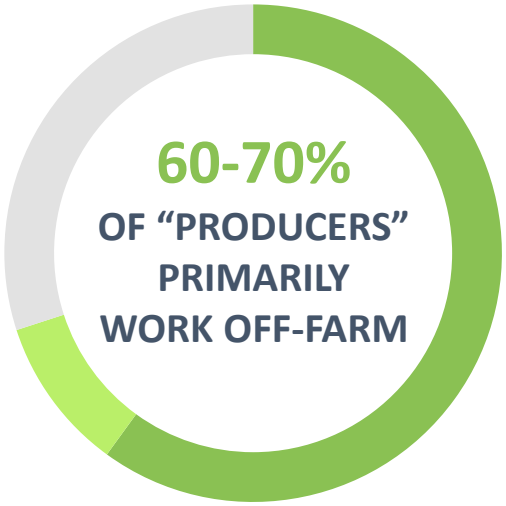
WESTERN COLORADO HAS MANY “FARMS”

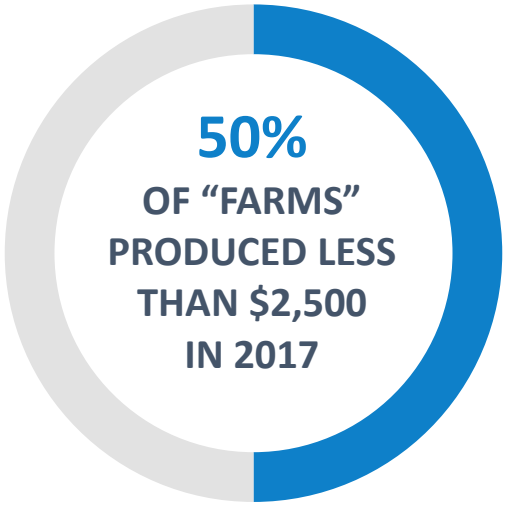
11,758

BUT FEWER FARMERS THAN YOU MIGHT EXPECT

13,563

WHY?



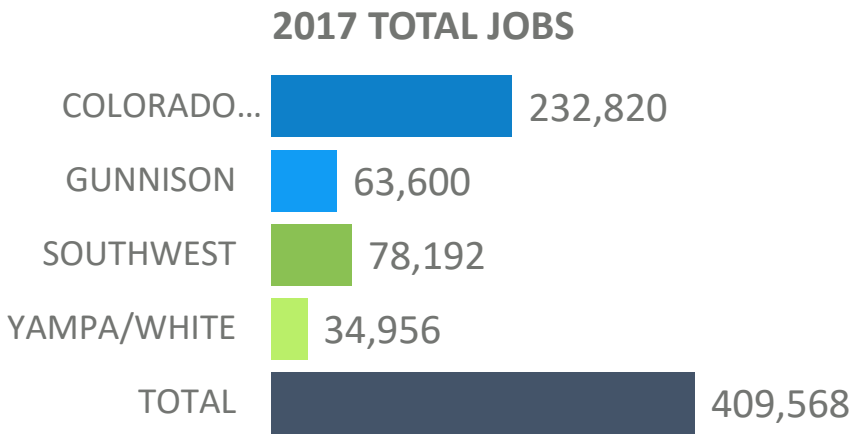


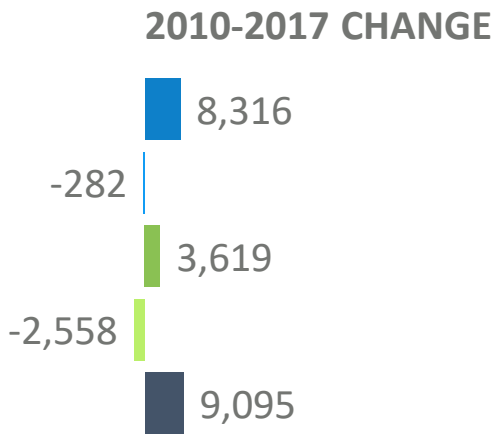
THESE TRENDS ARE REFLECTED IN THE VERY SMALL MEDIAN FARM SIZES IN WESTERN CO.

2017 AGRICULTURAL CENSUS DATA BY BASIN

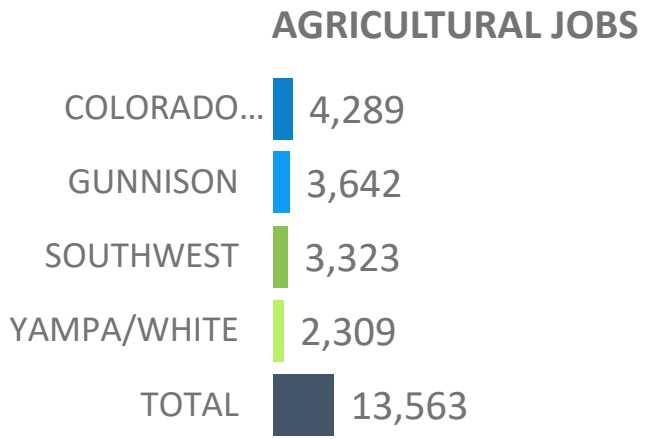
Colorado River	Gunnison	Southwest	Yampa/White	Western Colorado Total
NUMBER OF FARMS **3,349**	NUMBER OF FARMS **3,341**	NUMBER OF FARMS **3,399**	NUMBER OF FARMS **1,669**	NUMBER OF FARMS **11,758**
AVERAGE SIZE **360 ACRES**	AVERAGE SIZE **269 ACRES**	AVERAGE SIZE **542 ACRES**	AVERAGE SIZE **1,096 ACRES**	AVERAGE SIZE **491 ACRES**
MEDIAN SIZE **29 ACRES**	MEDIAN SIZE **36 ACRES**	MEDIAN SIZE **64 ACRES**	MEDIAN SIZE **111 ACRES**	MEDIAN SIZE **<55 ACRES**
FARMS WITH IRRIGATION **2,595**	FARMS WITH IRRIGATION **2,816**	FARMS WITH IRRIGATION **2,238**	FARMS WITH IRRIGATION **675**	FARMS WITH IRRIGATION **8,324**
MARKET VALUE OF PRODUCTION **$138.4 MILLION**	MARKET VALUE OF PRODUCTION **$172.1 MILLION**	MARKET VALUE OF PRODUCTION **$121.1 MILLION**	MARKET VALUE OF PRODUCTION **$83.5 MILLION**	MARKET VALUE OF PRODUCTION **$515.1 MILLION**
CHANGE IN MARKET VALUE **33%**	CHANGE IN MARKET VALUE **21%**	CHANGE IN MARKET VALUE **20%**	CHANGE IN MARKET VALUE **-9%**	CHANGE IN MARKET VALUE **17%**

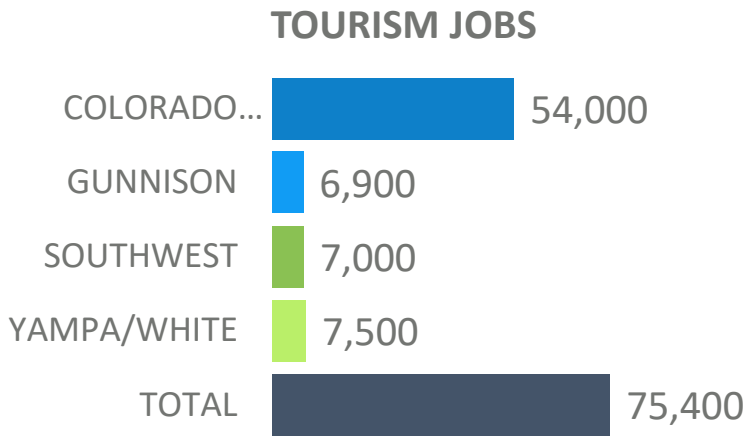
TOTAL EMPLOYMENT



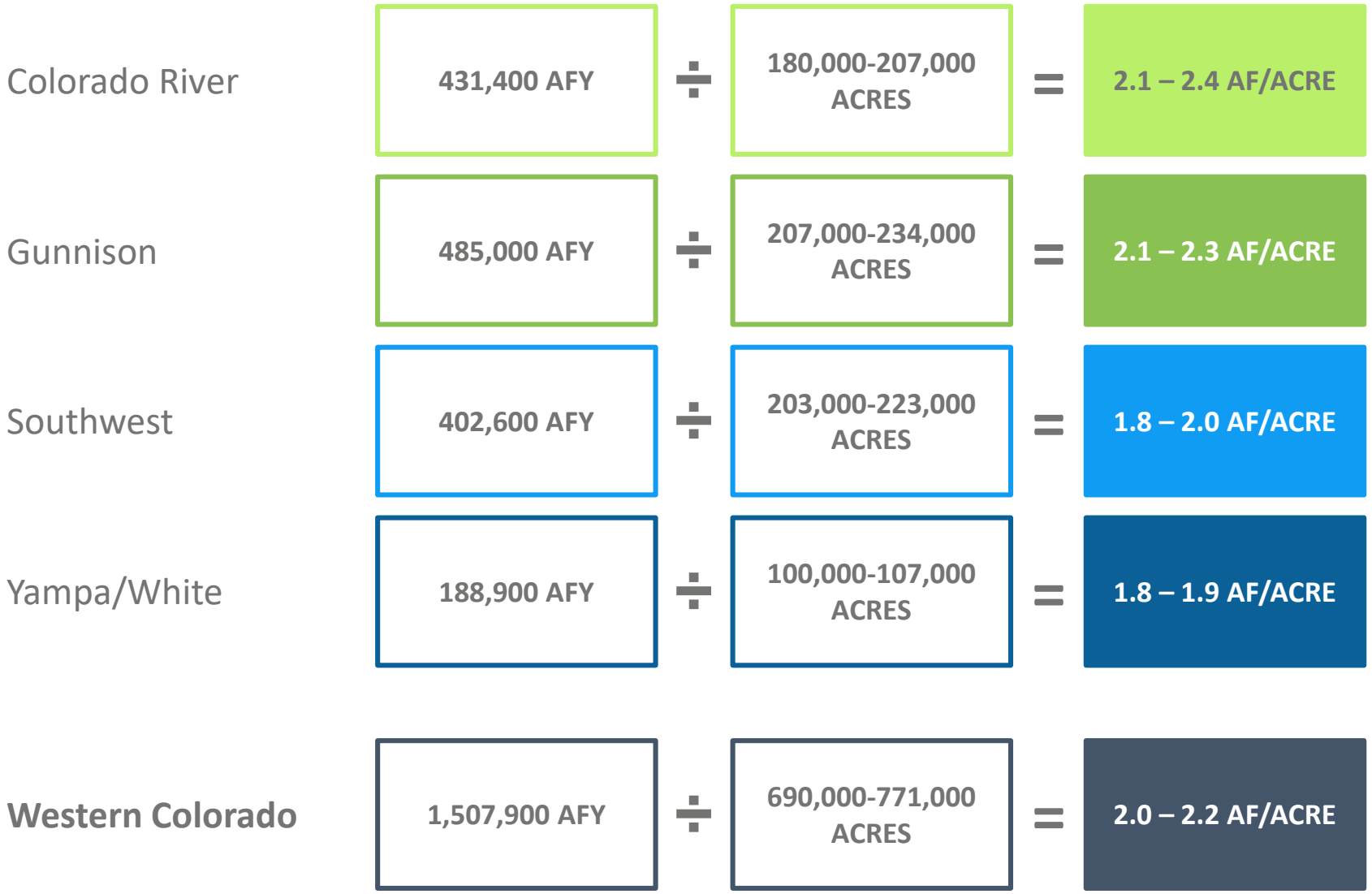


KEY SECTORS



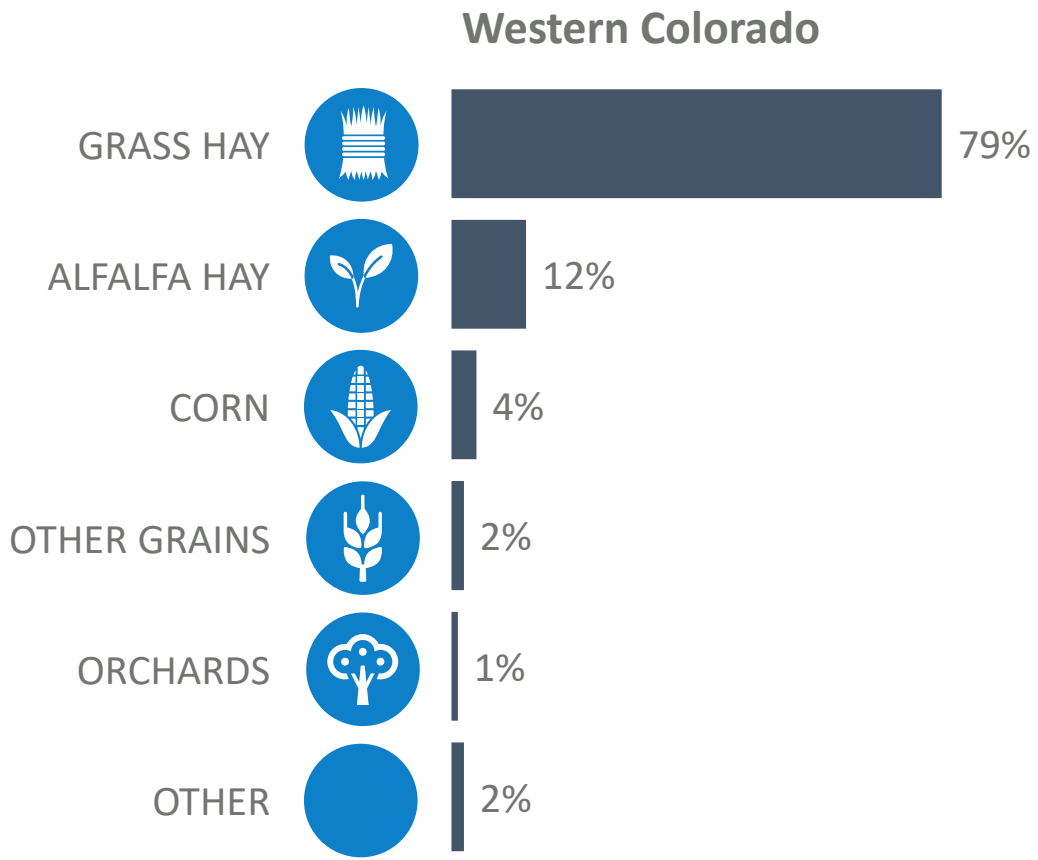


CONSUMPTIVE USE & IRRIGATED ACRES



CROPPING PATTERNS

FROM CDSS HISTORIC CROP ANALYSES (2015)



FIRST ROUND

OF

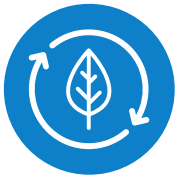
STAKEHOLDER MEETINGS

COMPOSITION OF STAKEHOLDER GROUPS


Agricultural Producers


Tourism/Marketing

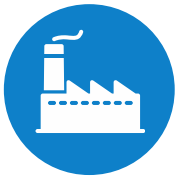

Agricultural Service Providers


Environment


Water Managers


Recreation


Local Governments


Energy and Other Industry

BIG PICTURE OBSERVATIONS

- How do impacts of demand management compare to impacts of curtailment?
- Other sectors and water users should contribute
- Legal and administrative issues (water rights, shepherding, etc.)
- In some basins, much of the hay is exported
- Hemp cultivation is an important recent trend, not yet fully understood

PARTICULAR CONCERNS

- Impacts on neighbors, other local water users (e.g., return flows, water for augmentation, weeds, aesthetics)
- Impacts to soil health from fallowing
- Impacts on operators who lease, but don't own irrigated lands
- Will participants fully understand costs and longer-term implications of fallowing?
- Agriculture helps stabilize Western Slope economy and provides non-market benefits

LIMITING IMPACTS

- Geographic dispersion is important—will require tailoring program
- Involve smaller farms that are not as productive?
- Partial fallowing or shifting to lower water use crops might be better than full fallow
- Less impact from demand management in wet years than dry ones
- Limiting proportions of farms that can be enrolled could reduce impacts

CREATING BENEFITS

- More water in rivers will improve water quality
- Communities with developed boating and fishing recreation could benefit
- Compensation payments could help participants upgrade farms and equipment and maintain viability
- Payments could also help participants transition to new crops or organics

NEXT STEPS

NEXT STEPS

- Framework development
- Scenario definitions
- Preliminary analysis
- Second round of stakeholder meetings
- Final results and reporting

SECONDARY IMPACT ANALYSIS FRAMEWORK