Agricultural Water Conservation, Productivity, and Water Transfers: Cooperation

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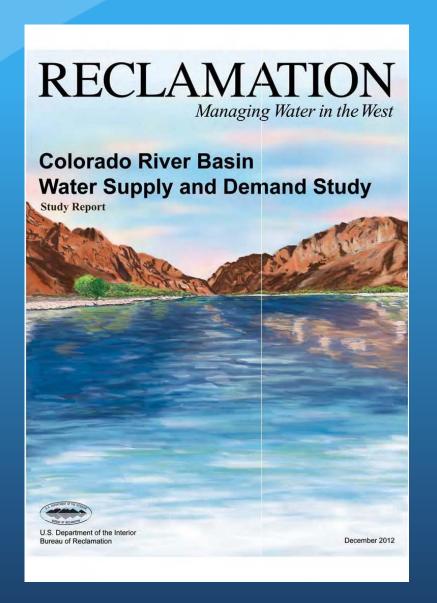
Colorado River Water Users Association Annual Conference

Las Vegas, Nevada

December 12, 2013

Colorado River Basin Water Supply and Demand Study

- Bureau of Reclamation and seven basin states
- Comprehensive study
- Confirmed likelihood of significant
- Options reduce Basin resource vulnerability
- Diligent planning and collaboration required





Moving Forward

Three Workgroups

- Municipal and Industrial Water
 Conservation and Reuse
- Environmental and Recreational Flows
- Agricultural Water Conservation,
 Productivity, and Transfers

Reclamation/Ten Tribes
Partnership study

• Three co-chairs

Reagan Waskom, Colorado Water Institute Tina Shields, Imperial Irrigation District Ken Nowak, US Bureau of Reclamation

• Over 40 members

All states, NGO's represented

• Three main focus areas

Agricultural uses

Conservation practices

Transfer methods

Why do we care?

Conclusions from the Basin Study:

Current agricultural demands dwarf all other demands combined;

Future agricultural water supplies are threatened by other sectors; significant future actions needed to protect sustainable agricultural water uses;

Agricultural productivity and economies are at risk.

Phase 1 – Seven Tasks (Data Collection)

- Create a baseline of existing projects and transfers
- Document the outcome of existing projects
- Identify opportunities for future programs and estimate yield
- Document potential impacts, costs, funding/incentive programs
- Document issues related to conservation and transfers in each state
- Categorize third party impacts on agriculture and communities
- Conduct periodic outreach to build consensus and prepare summary report

Propose Phase 2 activities to be conducted in 2014

Data Collection: Water Use Template

er Use Data											
n/Descripti	on of Agricul	lture:									
n:											
	Water Use Water Supply Crop Acreag			•				Production			
	Agricultural	Overall	Colorado River								
Irrigated	Water	Irrigation	Water (Percent of		Irrigated	Fruit and				_	
Acreage	Diversion	Efficiency	Total Diverted)	Field Crops	Pasture	Tree Nuts	Vegetables	Other		Crops	Fruit
									Cut hay or	Cut hay	Melons
									region appropriate	percent of total	region appropria
									crop	irrigated	crop
No.	Acre-feet	Ac-ft/ac	%	Acre	Acre	Acre	Acre	Acre	Tons/Acre	acres	Tons/Ac

Data Collection: Transfers Data Template

	Transfers													
	Program Examples		Mechanism Examples											
Internal water bank		Conservation	Municipal											
	One-time lease		Fallowing	Industrial										
	Long-term lease			Agricultural										
	Permanent transfer			Energy										
	Permanent dansier		2110181											
	Transfers (Internal - Farm to Farm, Farm to M&I, Farm to Energy, M&I to Farm - no change in				change in diversio	n)		Transfers (Exter	rnal - Farm to Fa	rm, Farm to M&	I, Farm to Energy	, M&I to Farm - o	hange in diversi	ion, place o
		Amount							Amount					
	Amount	Transferred		Transfer in Water	Transfer out	Transfer in	Transfer out	Amount	Transferred		Transfer in	Transfer out	Transfer in	Transfer
	Tranferred In	Out	Program?	Use(s)	Water Use(s)	Water Use	Water Use	Tranferred In	Out	Program?	Water Use(s)	Water Use(s)	Water Use	ι
Year	Acre-feet	Acre-feet		Туре	Туре	%	%	Acre-feet	Acre-feet		Туре	Туре	%	
1980)													
198:														
198														
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1994														
1995														
199	5													
199	7													

Data Collection: Conservation Programs Template

Conservation Programs		
_		
Year or range of years for which information below is provided?		
·		
Advanced Irrigation Scheduling		
Implemented conservation programs focused on irrigation scheduling?		Describe and reference
Year initiated?		Continuing?
Total acreage to which irrigation scheduling has been applied		
Estimated annual diverted water savings		
Estimated percent change in crop yield		
Estimated total average annual cost (\$)		Total Initial Investment (\$)
Was the program funded via cost share with an entity and/or program?		Percent of funding from other sources/programs?
Deficit Irrigation		
Implemented conservation programs focused on deficit irrigation?		Describe and reference
Year initiated?		Continuing?
Total acreage to which deficit irrigation has been applied		
Targeted crop types		
Estimated annual consumptive use savings		
Estimated percent change in crop yield		
Estimated total average annual cost (\$)		Total Initial Investment (\$)
Was the program funded via cost share with an entity and/or program?		Percent of funding from other sources/programs?
On-Farm Irrigation System Improvements		
Implemented conservation programs focused on on-farm irrigation system improvements?		Describe and reference
Year initiated?		Continuing?
	Prog. 1	
Acres converted		
Previous irrigation system type (e.g., flood)		
New irrigation system type (e.g., center pivot)		

Alternative Transfer Methods

Water Banking

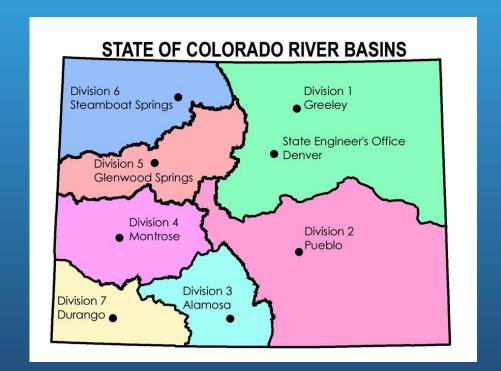
Colorado River Water Bank Work Group

- Colorado Water Conservation Board
- Colorado River Water Conservation District
- Southwestern Water Conservation District
- Front Range Water Council
- The Nature Conservancy

Cooperation

Colorado River Water Bank Work Group

- Willing agricultural participants
- Temporarily fallow or deficit irrigate lands irrigated by pre-Compact water rights
- Compensated for the loss of economic value while normal irrigation is reduced
- Saved consumptive use available to a Water Bank
- Post-Compact water users subscribe to Water Bank



Colorado River Water Bank Work Group

Phase 2 Report

- High altitude grass pasture presents special difficulties for fallowing or deficit irrigation
- Lower elevation systems do present an opportunity
- Non-economic values at issue
- Shepherding of saved CU
- Further education and research will be required to establish feasibility.

