Limited Irrigation Water - How to Maintain Profitability?

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Inland Northwest Drought Forum
Idaho Water Center - Boise, ID
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BWCC Water Team Members

Mike Telford Team	Chairman - Shareholder
Lynn Harmon	BWCC Manager
Mark Schwarz	BWCC Water Master
Dean Tschannen	BWCC Ditch Rider
Doug Albright	Shareholder
Ellis Gooch	Shareholder
Buck Hendren	Shareholder
Wendell Johnson	Shareholder
Patty Nance	Shareholder
Skip Owens	Shareholder
Acey Shaw	Shareholder
Stacy Scarrow	Shareholder
Bill Hazen	Consultant
Christi Falen	University of Idaho
Howard Neibling	University of Idaho

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Outline

1. 2013 alfalfa fall water mgmt. with 58 days irrigation
2. Keys to Water Team Success
3. Water Team Mission
4. Finding of Fact and Recommendations
5. Economics to Solve Controversial Issues
6. BWCC Water Team Impacts
7. Larger Watershed Mission/Plans?

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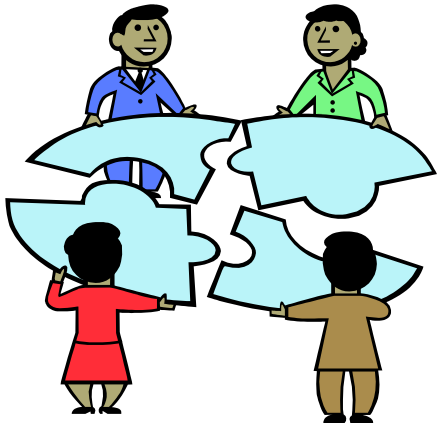
Teamwork from the Start

- Committee members can each have their own agenda. This can make us believe we are thinking, when instead we are advocating our position.
- The Water Team focus was on **real teamwork** with a common, **mutually concluded mission** to accomplish together.



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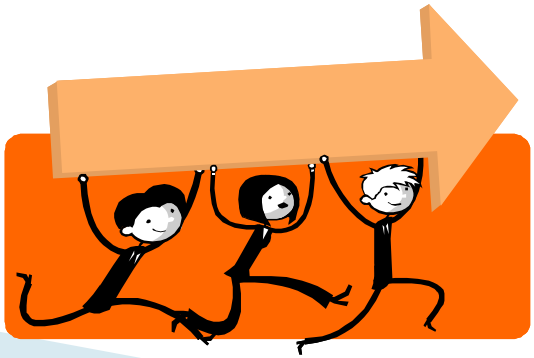
Water Team Approach

- Decisions made based on data and facts
- Open, honest communication
- Freedom to express ideas and ask questions with no side effects
- Trust, respect, accountability, integrity
- Mutual learning environment
- True willingness to listen to new data and facts, then implement necessary changes for the greater good
- Not an individual agenda, but a Water Team to help address issues for all shareholders on water management



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BWCC Water Team Mission Statement

- **The mission of the Water Team is to discover and present pertinent facts and data to answer the question.**

  Are there practices and/or improvements the BWCC can do to enhance the profitability and value of the resources of its grower/owners?

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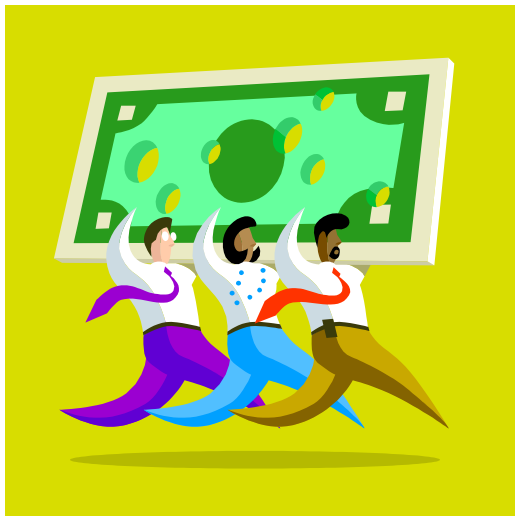
Water Team Five Areas of Focus

- Management practices at the farm and company level to increase days of water = increased $ returns
- Specific physical improvements
- Economic Analysis
- How much we are losing and where
- What others are doing



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Management Practices Recommendation 1

- Mandatory 48 hour advance notice for changes
- Ditch riders not mind readers or magicians

Recommendation 3

- Regulator ponds
- In-system mini storage
- Shock absorbers – end of ditch problems

Management Practices Recommendation 4

- Tighter deliveries of proper amounts
- Improved tracking and accounting
- Engage ditch riders in identification, measuring and mapping

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Management Practices Recommendation 5

- Use technology
- Start date wows
- Use information instead of emotion
- Echo Meters

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How much are we losing and where? Findings of Fact

- System efficiency 50%, farm efficiency 65% approximately
- Current mapping system lacking
- Losses need to be measured lateral by lateral.
- Updated information and mapping system needed

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System Physical Improvements Recommendation 3

- Begin the process of a case by case analysis of high loss areas
- 3 to 5 year payback (low hanging fruit)
- Establish protocol for analysis of sites

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Lincoln By-Pass Improvements

- Removed un-necessary checks
- Cost about $5,000
- Estimated 80 cfs saved – canal to run faster with less water depth
- Enough to irrigate 40 pivots or prolong irrigation season by 21 days

- Also reduced size of canal to improve water velocity, lessen the wetted front and improve efficiency
- Cost $40,700

- Combined cost/benefit ratio of 83 to 1 in one year

Economic Analysis
Finding of Facts

- Value of one day of water = $79,000 with average crop prices ($160,000 in 2008)
- Value of 1% increase in efficiency = $300,000
- Investment in extended days of water equals higher gross returns
- Extending the days we irrigate, on reduced acres, maximizes the gross return for all operations (small to large).

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Economic Analysis Recommendation 1

- When 70+ days are anticipated, deliver at 80%.
- The goal is to reach at least 100 days.
- When 100+ days are anticipated, deliver 100%.
- 45-60 days anticipated water, analysis shows no benefit to reduced flows.

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30 Acre Farm Gross Income by Days and % of Water

Water Mgmt.	Gross $	$ Per Acre
100% Water, 100% Land, 120 days	$17,200	$573
80% Water, 80% Land, 120 days	$14,360	$479
100% Water , 100% Land, 96 days	$13,500	$450
100% Water , 100% Land, 60 days	$10,800	$360
80% Water, 80% Land, 75 days	$12,600	$420
100% Water, 45 days	$6,400	$213

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520 Acre Farm Gross Income by Days and % of Water

Water Mgmt.	Gross $	$ Per Acre
100% Water, 100% Land, 120 days	$373,100	$717
80% Water, 80% Land, 120 days	$302,770	$582
100% Water , 100% Land, 96 days	$298,025	$553
100% Water , 100% Land, 60 days	$167,700	$346
80% Water, 80% Land, 75 days	$214,333	$421
100% Water, 45 days	$122,200	$235

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BWCC Water Team Impacts

- 17 recommendations implemented in 2008.
- Days of water use extended 16 days in 2008.
- Potential farm profits increased by $2.56 million in 2008.
- Encouraged water conservation.
- Cooperation among neighbors increased to keep water in the reservoir.
- Instead of a “use it or loose it” mentality for farm/ranch water management, the thought process is changing to “save water and make money.”
- GPS mapping
- Doppler meter water measurements
- Echo meter soil moisture monitoring
- Decreased water loss from problem areas

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Crossing Boundaries – What Worked?

- Teamwork with true openness to listen and actively engage with others on the Water Team to make decisions
- Mutually agreeing upon a mission and mutual learning
- Sticking with data and facts
- Using economics to understand effects of decisions
- Using days of water extension for the whole BWCC to "save water and make money"

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Questions?

What is the next step on an area wide basis to mitigate the effects of drought on the economy?

Can we create team missions by watershed?

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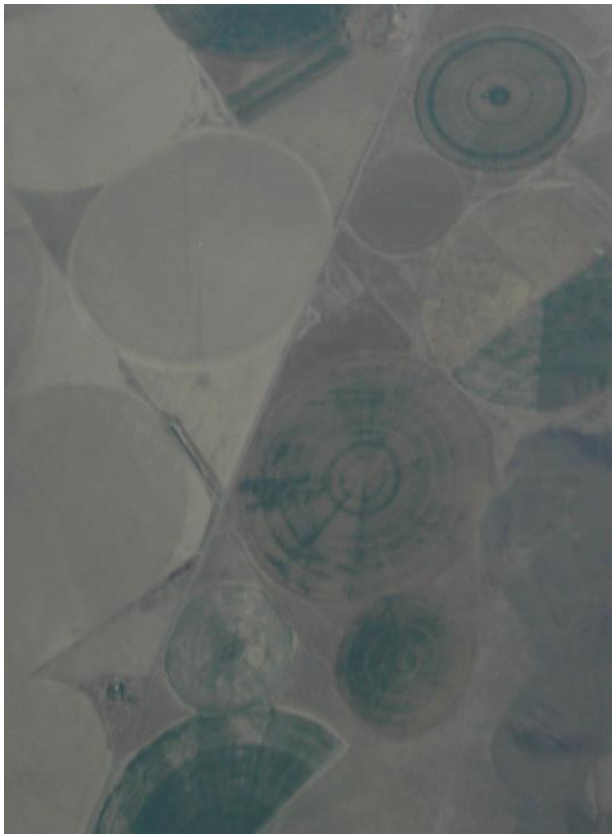
Management Practices Findings of Fact

- Cost the least and yield immediate benefits
- Revitalizing management practices essential to fully realize benefits of physical system improvements



Management Practices
Findings of Fact

- Management key to extended season
- Use it or lose it mentality - paradigm change needed
- "Save water and make money"

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Management Practices On-Farm Findings of Fact

- Farmers are utilizing programs
- Difficult to pay for improved technology with uncertain water supplies.
- Extending the season in short water years helps amortize technology
- Farmers and the company need encouragement

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30 Acre Farm Gross Income by Days and % of Water

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Acres		Value w/ full irrig.	100% Water 100% Land 120 days	80% Water 80% Land 120 days	100% Water 100% Land 96 days
10	Hay	$550	$5,500	$4,400	$4,125
10	Pasture	$450	$4,500	$3,600	$3,375
10	Sm. Grain	$600	$6,000	$4,800	$6,000
	Total Irrig. Land		$16,000	$12,800	$13,500
Plus	Hay			$330	
	Pasture			$270	
	Sm. Grain		$1,200	$960	
	Total All Land		$17,200	$14,360	$13,500
	Per Acre		$573.33	$478.66	$450.00

30 Acre Farm Gross Income by Days and % of Water

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Acres		100% H2O 100% Land 120 days	100% H2O 100% Land 60 days	80% H2O 80% Land 75 days	100% H2O 45 days
10	Hay	$5,500	$3,300	$3,300	$2,200
10	Pasture	$4,500	$2,700	$2,700	$1,800
10	Sm. Grain	$6,000	$4,800	$6,000	$2,400
	Total Irrig. Land	$16,000	$10,800	$12,000	$6,400
Plus	Hay				
	Pasture			$330	
	Sm. Grain	$1,200		$270	
	Total All Land	$17,200	$10,800	$12,600	$6,400
	Per Acre	$573.33	$360.00	$420.00	$213.33

520 Acre Farm Gross Income by Days and % Water

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Acres		Value w/ full irrig.	100% Water 100% Land 120 days	80% Water 80% Land 120 days	100% Water 100% Land 96 days
130	Hay	$550	$71,500	$57,200	$53,625
260	C. Silage	$800	$208,000	$166,400	$156,000
130	Sm. Grain	$600	$78,000	$62,400	$78,000
	Total Irrig. Land		$357,500	$286,000	$287,625
Plus	Hay			$4,290	
	C. Silage				
	Sm. Grain		$15,600	$12,480	
	Total All Land		$373,100	$302,770	$287,625
	Per Acre		$717.50	$582.25	$553.13

520 Acre Farm Gross Income by Days and % of Water

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Acres		100% H2O 100% Land 120 days	100% H2O 100% Land 60 days	80% H2O 80% Land 75 days	100% H2O 45 days
130	Hay	$71,500	$42,900	$42,900	$28,600
260	C. Silage	$208,000	$74,880	$93,600	$62,400
130	Sm. Grain	$78,000	$62,400	$78,000	$31,200
	Total Irrig. Land	$357,500	$180,180	$214,500	$122,200
Plus	Hay			$4,290	
	C. Silage				
	Sm. Grain	$15,600			
	Total All Land	$373,100	$180,180	$218,790	$122,200
	Per Acre	$717.50	$346.50	$420.75	$235.00