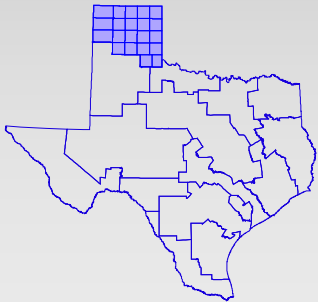


AGRICULTURAL WATER CONSERVATION STRATEGIES UPDATE

**Panhandle Water
Planning Area**



**Panhandle Region Water Planning Committee
Meeting
November 5, 2014**

Estimated Water Savings of Conservation Strategies for Region A

Cumulative Region A estimated water savings for alternative conservation strategies in acre-feet, 2020-2070

Conservation Strategy	Water Savings (acre-feet)
Irrigation Scheduling	4,685,325
Irrigation Equipment Changes	3,643,928
Change in crop type	6,394,663
Change in crop variety	3,064,326
Conversion to Dryland	4,156,337
Soil Management	1,970,123
Advances in Plant Breeding for Drought Tolerance	13,821,966
Precipitation Enhancement	813,923

Impact of Conservation Strategies on Region A Deficit Counties

Dallam County Projected Annual Irrigation Shortage and Water Savings by Strategy (acre-ft./year) 2020-2070

		2020	2030	2040	2050	2060	2070
Projected Shortage		-78,969	-91,254	-93,817	-87,061	-77,457	-67,839
Projected Water Savings							
Water Saving Strategies	Change in Crop Type	8,341	16,683	25,024	33,365	41,707	50,048
	Change in Crop Variety	5,381	10,761	16,142	16,142	16,142	16,142
	Soil Management	2,147	4,295	6,442	8,590	10,737	10,737
	Convert to Dryland	9,245	18,489	18,489	18,489	18,489	18,489
	Irrigation Equipment	5,947	9,635	13,579	15,566	20,841	23,484
	Irrigation Scheduling	5,547	11,094	20,338	24,036	25,885	27,734
	Precipitation Enhancement	0	0	0	0	0	0
	Advances in Plant Breeding	19,445	33,500	72,708	81,256	82,123	82,123

Hartley County Projected Annual Irrigation Shortage and Water Savings by Strategy (acre-ft./year) 2020-2070

		2020	2030	2040	2050	2060	2070
Projected Shortage		-77,305	-93,368	-98,650	-92,699	-83,415	-74,130
Projected Water Savings							
Water Saving Strategies	Change in Crop Type	6,842	13,685	20,527	27,369	34,211	41,054
	Change in Crop Variety	4,406	8,812	13,218	13,218	13,218	13,218
	Soil Management	1,864	3,728	5,592	7,456	9,320	9,320
	Convert to Dryland	8,632	17,263	17,263	17,263	17,263	17,263
	Irrigation Equipment	5,553	8,996	12,679	14,535	19,460	21,928
	Irrigation Scheduling	5,179	10,358	18,990	22,442	24,169	25,895
	Precipitation Enhancement	0	0	0	0	0	0
	Advances in Plant Breeding	15,812	27,154	59,014	65,927	66,615	66,615

Moore County Projected Annual Irrigation Shortage and Water Savings by Strategy (acre-ft./year) 2020-2070

		2020	2030	2040	2050	2060	2070
Projected Shortage		554	599	640	-4,960	-8,858	-12,764
Projected Water Savings							
Water Saving Strategies	Change in Crop Type	3,325	6,650	9,976	13,301	16,626	19,951
	Change in Crop Variety	2,562	5,124	7,685	7,685	7,685	7,685
	Soil Management	1,039	2,078	3,117	4,155	5,194	5,194
	Convert to Dryland	3,572	7,144	7,144	7,144	7,144	7,144
	Irrigation Equipment	2,300	3,726	5,251	6,020	8,059	9,081
	Irrigation Scheduling	2,143	4,286	7,858	9,287	10,001	10,716
	Precipitation Enhancement	0	0	0	0	0	0
	Advances in Plant Breeding	7,446	13,321	28,560	31,763	32,271	32,271

**Estimated Water Savings of
Likely Combinations of
Conservation Strategies for
Region A**

Water Savings Estimates from Nine Likely Combinations of Strategies

- Irrigation Scheduling and Irrigation Equipment
- Crop Type and Irrigation Scheduling
- Crop Variety and Irrigation Scheduling
- Advances in Plant Breeding (PB) and Irrigation Scheduling
- Crop type and Irrigation Equipment changes
- Crop Variety and Irrigation Equipment changes
- Crop Type and Crop Variety
- Advances in PB and Irrigation Equipment
- Crop Type and Advances in PB

Evaluating Water Savings by Strategy Combinations

- Water savings of combined strategies were evaluated using a stepwise procedure
 - Implement one of the strategies and calculate the change in water use/crop composition etc.
 - Implement the second strategy and calculate water savings given changes incurred from the first strategy
- The Strategy of combining **Irrigation Scheduling** and changes in **Irrigation Equipment** was the exception

Estimated water savings from the combination of adoption of change in *crop type* and *irrigation scheduling*, Region A (acre-feet/decade)

Strategy	Estimated water savings (acre-feet/decade) above the baseline (2013-2070)						
	2013	2020	2030	2040	2050	2060	2070
Change in crop type	0	304,508	609,016	913,523	1,218,031	1,522,539	1,827,047
Irrigation scheduling (original)	0	226,709	453,419	831,267	982,407	1,057,977	1,133,546
Irrigation scheduling (re-estimate)	0	206,916	404,697	729,257	839,288	878,317	914,301
Combination	0	511,424	1,013,713	1,642,781	2,057,319	2,400,856	2,741,348

Where do we go from here?

- Re-estimate potential water savings from combinations of strategies for deficit counties
 - *Irrigation scheduling, equipment changes and crop type*
 - *Irrigation scheduling, equipment changes and change in crop variety*
 - *Irrigation scheduling, equipment changes, advances in crop breeding and change in crop type*
- Perform cost analysis by strategy
- Estimate regional economic impact by strategy??

The End

FOR NOW