

Select slides for GMD 3 from “Breakfast with Barfield”

Governor’s Water Conference
November 8, 2019

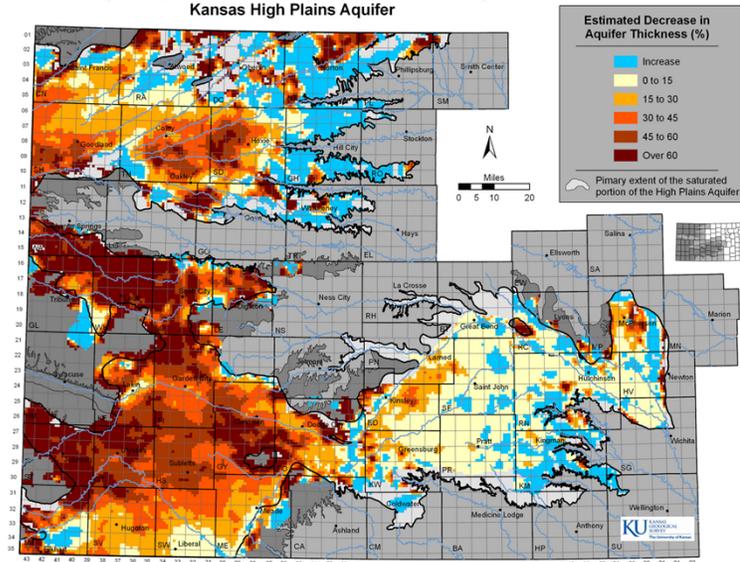
David Barfield, Chief Engineer

Division of Water Resources
Kansas Department of Agriculture



The Ogallala challenge: Percent Change in Saturated Thickness of O-HP Aquifer

Percent Change in Aquifer Thickness, Predevelopment to Average 2016-2018,
Kansas High Plains Aquifer



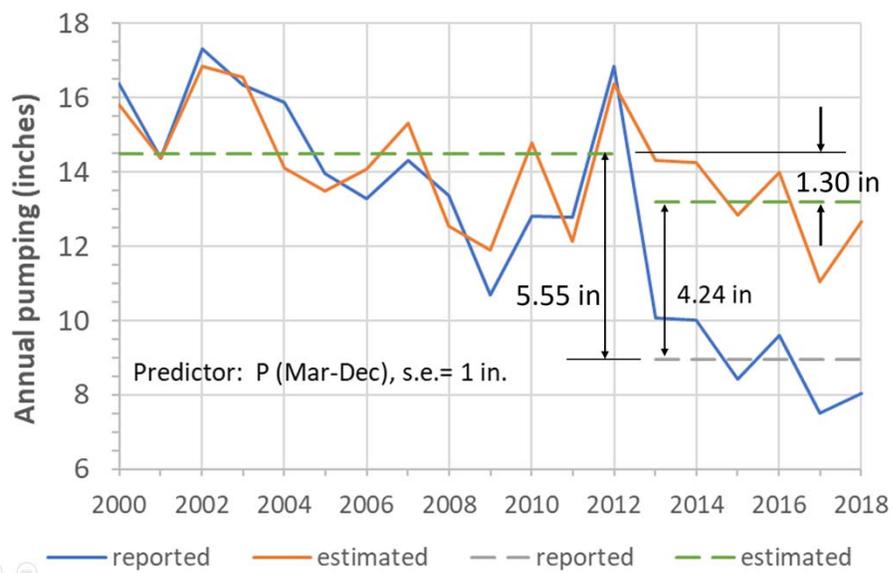
Notes:

- Despite significant declines, significant use continues and the water resource is critical to today and tomorrow’s economy.
- While south-central Kansas is experiencing less declines in groundwater levels, ground use is reducing streamflows.

Legislative acts to encourage groundwater conservation

- 1972: Groundwater Management District (GMD) Act allow for the creation of **GMDs** to lead in local water conservation efforts
 - 1978: GMD Act amended to allow for Intensive Groundwater Use Control Areas (**IGUCAs**).
- Adding tools to facilitate water conservation:
 - 2012: Local Enhanced Management Areas (**LEMA's**) allowed
 - 2012: MYFA reform
 - 2015: Water Conservation Areas (**WCA's**) allowed
- Getting rid of use it or loss it:
 - 2012: Eliminating abandonment of groundwater rights in closed areas
 - 2015: Requirement for chief engineer to give due consideration of past voluntary conservation in all conservation programs

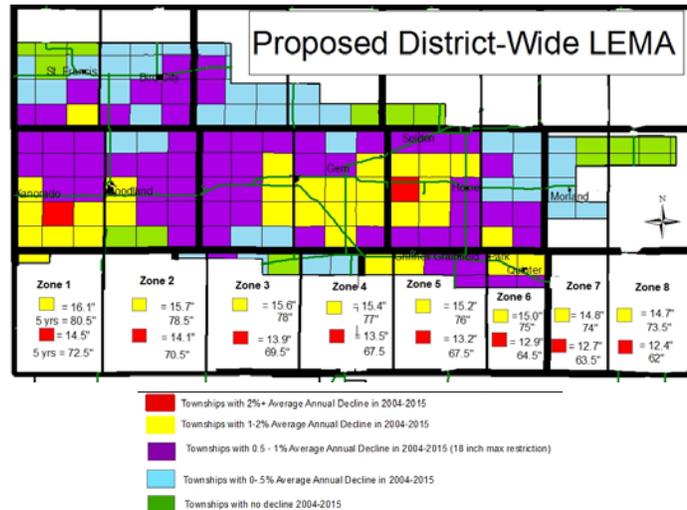
Sheridan 6 LEMA : Significantly reduced groundwater use



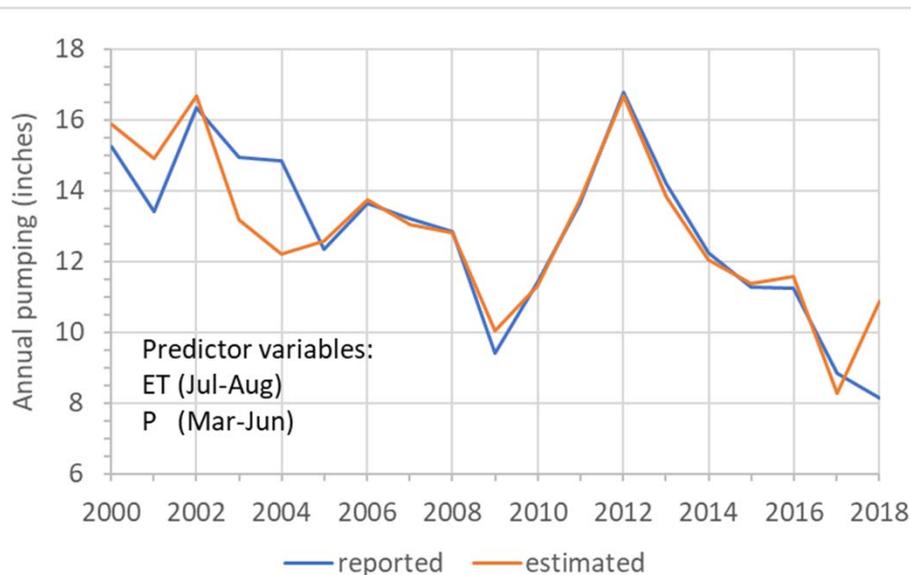
- Blue = reported use
- Orange = estimated use based on climate factors (2000-12)
- Average actual use for 2013-18 was 38% less than 2000-12, and 32% less than climate predicted values.

GMD#4 District Wide LEMA

- GMD 4 determined rate of decline by township
- Sets 5-year allocations in inches/acre based principally on NIR for corn
 - Highest decline areas (red): 13-14 inches
 - Second highest decline (yellow): 15-16 inches
 - Purple township, 18 inches
 - Blue/Green: no restrictions
- No additional flexibilities, encourages WCAs



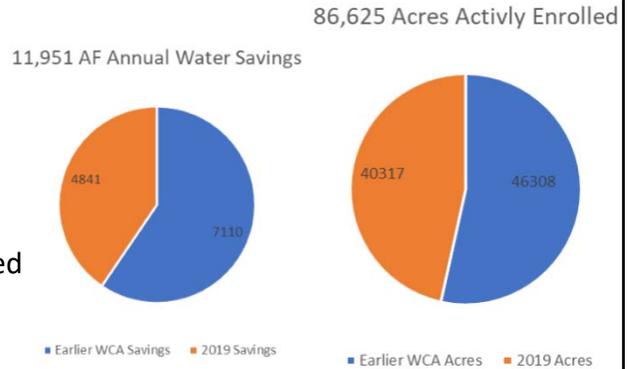
GMD 4 LEMA, reported use and estimated use 2018 first year of LEMA



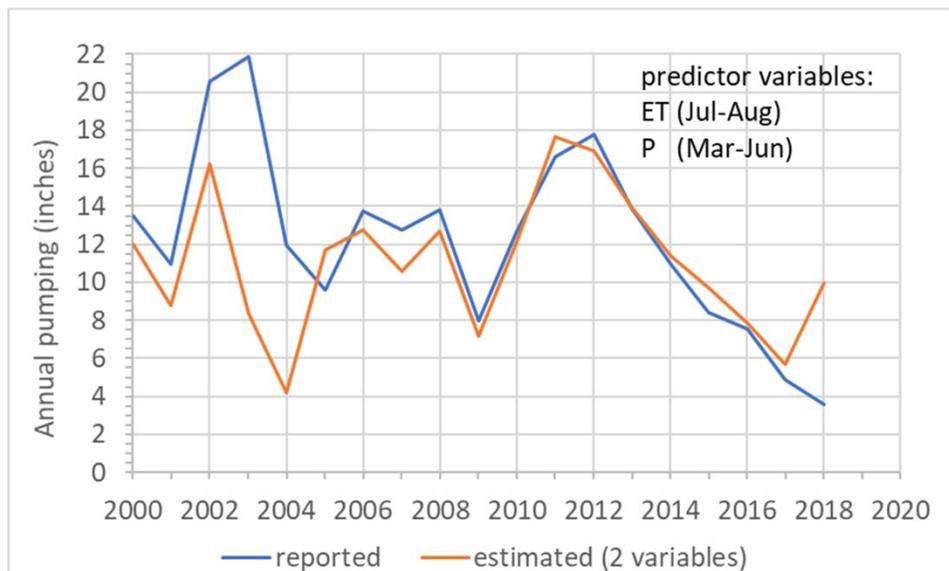
WCA's totals

- Current status:
 - 27 plans active as well as 26 Wichita County WCA consent agreements
 - 86,625 active acres enrolled
 - 11,951 acre-feet of annual water savings
- Several significant WCA plans have been approved this year:
 - Seven (7) plans approved in 2019
 - 40,317 acres enrolled in 2019
 - 4,841 acre-feet annual water savings
- Renewals, first round WCAs buying back in:
 - T&O LLC and Westside Dairy with increased annual savings

WCA Name	County	Plan	Agreement & Order	Period	Enrolled(Ac/Yr)	Savings (AF/Yr)	Approved
	SC/WH	WCA Plan	WCA CAO	2019-2025	5,959	812	10/04/2019
Wichita County (2018)	FI/KE	WCA Plan	WCA CAO	2018-2022	15,578.97	2,001	07/22/2019
' & Cattle	FI	WCA Plan	WCA CAO	2018-2022	9,588.3	1,074	06/28/2019
(9)	FI	WCA Plan	WCA CAO	2019-2021	1,570		11/06/28/2019
ST	WCA Plan	WCA CAO	2019-		720	212	06/11/2019



Big D Farms WCA, started 2017 – use vs estimates



Local, Voluntary Efforts to Conserve Ogallala Groundwater are Effective and Merit Support

Voluntary group efforts are effective at conserving groundwater, and merit state support to help local organizers succeed and to create a social-political environment that encourages producers to participate.

Kansas producers overwhelmingly support groundwater conservation.

- **90% believe** that groundwater should be saved or conserved.

Primary motivation for conservation is supporting the local community & future generations.

- **84% agree** that water should be conserved so that “future generations in my area can enjoy the benefits I have experienced”, only 4% disagree
- **68% agree** that water should be conserved so that “jobs and business opportunities continue to be available in my community in the future”, only 8% disagree

“I used to think that water was mine and I could do with it as I pleased. And I still think the water under my land is mine, but I also believe in a greater sense that it's ours and we need to conserve it ... And **I think it would be extremely selfish for us to use that water up and not save it for future generations.**”

– Producer in West Central Kansas

Most Kansas producers believe they are already doing all they can individually to conserve water.

- 70% believe they already limit their own groundwater use as much as possible
- Only 18% perceive additional personal capacity for conservation

But producers in voluntary group efforts like LEMA's and WCA's are finding additional ways to conserve.

“I think these efforts make a lot of difference... **I think more water has been conserved... after the LEMA talks have started than was ever conserved before.** And I don't think it has to do so much with soil probes and some of this technology. I think it's more a state of mind. I shut my wells off when it rains and then I go back and probe and check and see. **And it just seems like more people are more aware of the situation...**”

– Producer in Southwest Kansas

With support, voluntary group efforts have opportunity to grow.

- 81% of Kansas producers are open to the possibility that voluntary group efforts can solve problems, 79% believe that they personally might have something worthwhile to contribute
- However, only 4% of Kansas producers are currently involved in organizing voluntary group efforts, primarily due to the time commitments involved

5 recommendations for voluntary group conservation efforts:

- Diverse Stakeholder Representation
- An Early Focus on Teambuilding
- Hiring an Outside Facilitator
- Frequent and Respectful Community Outreach
- Partnering with State and Local Government

For more info, visit

<http://bit.ly/KSgroundwater>

Matt Sanderson mattr@k-state.edu

785.532.4969

Stephen Lauer slauer@k-state.edu

515.473.2790

Research Methods: We conducted a survey of 1226 producers across Ogallala region (279 in Kansas), 41 KS producer interviews, and a case study of the Wichita County Water Conservation Area.

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Funding for this research was provided in part through a Rural Sociological Society Dissertation Improvement Award. www.ruralsociology.org