

## **CONSERVING OGALLALA COMMUNITIES: THE SOCIAL ASPECTS OF GROUNDWATER MANAGEMENT**

Stephen Lauer  
Sociology Research Assistant  
Kansas State University  
Manhattan, Kansas  
Email: slauer@ksu.edu

Matthew R. Sanderson  
Professor of Sociology  
Kansas State University  
Manhattan, Kansas  
Email: matt@ksu.edu

### **SUMMARY**

**BACKGROUND AND PURPOSE:** Rural farm communities in the High Plains rely on groundwater from the declining Ogallala aquifer. We present findings from a four-year, USDA-funded research project on the values and motivations for groundwater conservation among High Plains producers.

**METHODS:** We conducted a survey of 1226 producers across the Ogallala aquifer region, 41 interviews with Kansas producers, a case study of the Wichita County Water Conservation Area, and a literature review of earlier social science findings.

**FINDINGS:** An overwhelming majority of producers believe that Ogallala groundwater should be conserved. Their primary motivations for groundwater conservation are securing their way of life for future generations, supporting their local communities, and preparing for droughts. While most producers believe that they are already doing all they can individually to conserve water, producers involved in voluntary group efforts like Local Enhanced Management Areas and Water Conservation Areas are finding additional ways to conserve.

Voluntary group efforts have tremendous opportunity to grow. While only 7% of producers are currently involved in organizing voluntary group conservation efforts, 84% are open to the possibility that such efforts can solve problems and 83% believe they might personally have something to contribute. Successful voluntary group conservation efforts involve: diverse stakeholder representation, an early focus on team-building, hiring an outside facilitator, frequent, respectful community outreach, and partnering with state and local government.

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

### **RESEARCH METHODS**

Between January and June of 2018, we conducted a survey of 1226 producers across the six-state Ogallala aquifer region. Our goal was to determine how prevalent are various attitudes towards groundwater management. The demographics of our respondents indicate that they are representative of producers in the region. Our overall response rate was 15.9%. Our survey margin

of error of is +/- 3% at a 95% confidence interval. We present peer-reviewed survey findings in “Producer attitudes toward groundwater conservation in the U.S.-High Plains” in *Groundwater*.

Between March 2017 and February 2019, we conducted interviews with 41 producers in western Kansas Groundwater Management Districts 1, 3, and 4. Our goal was to understand the full diversity of attitudes towards groundwater management. To this end, we included a diversity of farm sizes and types among the producers we interviewed.

Beginning in March 2018, we conducted a case study into the Wichita County Water Conservation Area. Case study methods included interviews with the organizers, document analysis, and observation of meetings. Our goal was to understand how voluntary group conservation efforts work, with a focus on group dynamics and developing recommendations for future efforts.

## WHAT DO INDIVIDUAL PRODUCERS THINK ABOUT GROUNDWATER MANAGEMENT AND CONSERVATION?

### Producers overwhelmingly support groundwater conservation.

- **92% believe** that groundwater should be saved or conserved.
- **59% believe** that groundwater decline is a “serious” or “very serious” problem.

#### *“Should groundwater from the Ogallala be conserved or saved?”*

Overall	NE	CO	KS	OK	NM	TX
<b>Yes 92%</b>	Yes 83%	Yes 81%	Yes 90%	Yes 92%	Yes 94%	Yes 84%
<b>No 8%</b>	No 27%	No 19%	No 10%	No 8%	No 6%	No 16%

#### *“Groundwater should be used. Groundwater does no good in the ground.”*

Overall	NE	CO	KS	OK	NM	TX
<b>Yes 25%</b>	Yes 27%	Yes 33%	Yes 14%	Yes 19%	Yes 24%	Yes 29%
<b>No 47%</b>	No 43%	No 44%	No 58%	No 47%	No 62%	No 37%

**“I think about water all the time... We’re all doing our part to keep our families and traditions afloat, to maintain what we have and pass it on.”**

*- Producer, Northwest Kansas*

### Aquifer depletion is seen by producers as primarily a community problem.

**A majority of producers in every state except Nebraska believe that a depleted aquifer would be a threat to their community.**

State	Personal Problem	Community Problem	Gap in Perception Community vs. Personal
<b>Overall</b>	29% agree	47% agree	+18% difference
<b>NE</b>	23%	29%	+6%
<b>CO</b>	56%	67%	+11%
<b>KS</b>	37%	61%	+24%
<b>OK</b>	47%	55%	+8%
<b>NM</b>	61%	76%	+15%
<b>TX</b>	73%	80%	+9%

**“If we’re completely dry, we lose what’s the bulk of the economic driver in this community. And I think without that we’ll slowly lose the school and the hospital because we don’t have enough to support them. It really becomes a slow drying up of our community.”**

*- Wichita WCA Team Member*

**Producers' primary motivations for conservation are:**

- 1. Securing a way of life for future generations**
  - **84% agree; 4% disagree**
- 2. Supporting Local Communities**
  - **68% agree; 8% disagree**
- 3. Preparing for droughts**
  - **73% agree; 11% disagree**

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

*- Producer, West-Central Kansas*

**Most producers believe they are already doing all they can to individually conserve water:**

- **72% believe** they already limit their groundwater use as much as possible.
- **Only 7%** believe they can conserve more water.

**Key Finding:** Survey findings suggest **limited room for additional conservation impacts from existing policies and activities oriented toward individual producers only.** However, producers involved with **voluntary group efforts** are finding more ways to conserve.

## **WHY SHOULD VOLUNTARY GROUP EFFORTS TO CONSERVE GROUNDWATER BE SUPPORTED?**

Producers involved with voluntary group efforts are finding more ways to conserve.

The Wichita County Water Conservation Area (WCA) in west-central Kansas and the Sheridan County 6 Local Enhanced Management Area (LEMA) in northwest Kansas are two examples of locally led community groups which have successfully achieved water conservation in their areas.

"The things we hear today in this public meeting say that **these guys just don't know what they don't know yet.** They don't have all the data we have. Also, just the communication part of: **'I'm not sayin' you're not conserving water. I'm saying that we can do better.'** And once we get past that then people begin to open their minds to, 'Okay, this might have some merit to it.'"

*- Wichita WCA Team Member*

"**Since the LEMA** [Local Enhanced Management Area], **we've become better managers of water, more focused on return.** We're better off in the LEMA even with lower commodity prices because we're managing to get a higher return."

*- Producer, Northwest Kansas*

"**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 much to do with soil probes and some of this technology. I think it's more of 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, Southwest Kansas*

## With support, voluntary group efforts have room to grow.

- **84% of producers are open to the possibility** that voluntary group efforts can solve problems.
- **83% of producers believe** that they might personally have something worthwhile to contribute.
- **Only 7% of producers are currently involved** in organizing voluntary group efforts.

## Voluntary group efforts face significant challenges.

- **Much time and effort** is required to organize group efforts.
- **There are no easy answers** to the questions these group efforts must tackle.

“Everybody on that committee that tried to start this, **we’ve put in hundreds of hours**. I mean it was incredible to see the motivation that they had, too!

- *Wichita WCA Team Member*

“We’re trying to make it so that everybody takes an equal cut without being unfair to one side or the other So it’s an impossible situation. That’s why **we’re moving ahead slowly** [with the LEMA], **because we don’t know the right answer. And I don’t think anybody can tell us what is the right answer.**”

- *Producer, Southwest Kansas*

**Key Finding:** With widespread community-minded motivations for conservation, it could be **possible to see meaningful gains from voluntary group efforts** that reduce costs and increase benefits of conservation.

## **WHAT SHOULD BE CONSIDERD WHEN ORGANIZING VOLUNTARY GROUP EFFORTS?**

### Recommendations for voluntary group efforts include the following:

1. **Invite diverse stakeholder representation.** Include young and old, male and female, small and large farms, feedlots, and other local stakeholders.
2. **Focus early on teambuilding.** Find common values to fall back on when conversations become heated.
3. **Hire an outside facilitator.** A skilled, neutral third party can manage conversations and keep the group on track.
4. **Engage in frequent and respectful community outreach.** If you don’t tell your story to your community, someone else will.
5. **Partner with state and local government.** Thus far, every effort in Kansas has received free information and technical and legal expertise from state agencies.
6. **Contact your state university land grant extension office for more information.**

## **Reflections of Wichita County WCA organizers:**

“Over the years I’ve come to realize that in every issue there’s content and there’s process. **You gotta have a credible process that engages all stakeholders** who are gonna be affected by the change.”

- Wichita WCA Team Member

“My faith keeps me going. I am hopeful, no matter what. I do believe that **when you get rid of the old, and you’re willing to go through the grief of letting go, it’s amazing what may be resurrected out of that grave.**”

- Wichita WCA Team Member

“**I want to be able to say to my kids. ‘Yep. We worked hard to save the water here** so that we know we have a way of life that we can sustain for years to come.’”

- Wichita WCA Team Member

## **WHAT ELSE CAN SOCIAL SCIENCE RESEARCH TELL US ABOUT VALUES AND GROUNDWATER MANAGEMENT?**

Our research editorial study (Lauer et al, 2018) reviewed 60 years of social scientific research into human values and groundwater management in the Ogallala aquifer region. Key findings include:

- 1. People follow the groundwater.** Since 1960, population grew in counties with access to abundant Ogallala groundwater and declined elsewhere. Overall population in the High Plains region remained constant.
- 2. Benefits for profitability vary by location.** Economic models show that groundwater conservation policies increase long-term agricultural profits in local areas with low saturated thickness. Outside of these local areas, conservation policies have a smaller impact on long-term agricultural profits.
- 3. Cultural and moral values are important.** Research into successful groundwater management efforts in other locations shows that cultural and moral values are threatened by a depleted aquifer. Groundwater management goals must align with people’s feelings about fairness and respect farming as a way of life in the affected region.
- 4. Cultural and moral values are under-studied in the Ogallala region.** Despite some research indicating that cultural and moral values are relevant for the Ogallala aquifer, little research has been done to characterize and identify these values and their importance in comparison to other values, such as agricultural profit.

## CONCLUSIONS

- Producers overwhelmingly support groundwater conservation.
- Primary motivations are supporting the local community and future generations.
- Most producers believe they are already doing all they can individually to conserve groundwater.
- Producers involved in voluntary group efforts are finding additional ways to conserve.
- With support, voluntary group efforts have opportunity to grow.

Recommendations for voluntary group efforts include diverse stakeholder representation, an early focus on teambuilding, hiring an outside facilitator, frequent and respectful community outreach, and partnering with state and local government.

## ACKNOWLEDGEMENTS

This paper is adapted from:

Lauer, S. & Sanderson, M. (2020). *Ogallala water coordinated agriculture project resource guide series: Producer Attitudes Toward Groundwater Conservation* (OWCAP-2020-RGS-Producer Attitudes). Retrieved from <http://ogallalawater.org/producer-attitudes>

This material is based upon work that is supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, under award number 2016-68007-25066, “Sustaining agriculture through adaptive management to preserve the Ogallala aquifer under a changing climate.” Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture.

## REFERENCES

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## OTHER AVAILABLE INFORMATION

Our collection of Peer-Reviewed Articles, PowerPoint Presentations, and Summary White-Papers associated with this research project is available at: [www.bit.ly/KSGroundwater](http://www.bit.ly/KSGroundwater)