

Water Supply Infrastructure, Conservation, and Moderation: How Owning a Well Affects Kansans' Environmentalism

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Funding

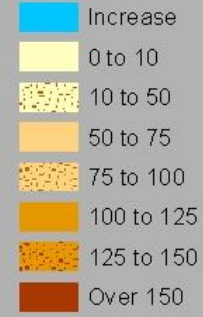
University of Kansas

Institute for Policy & Social
Research

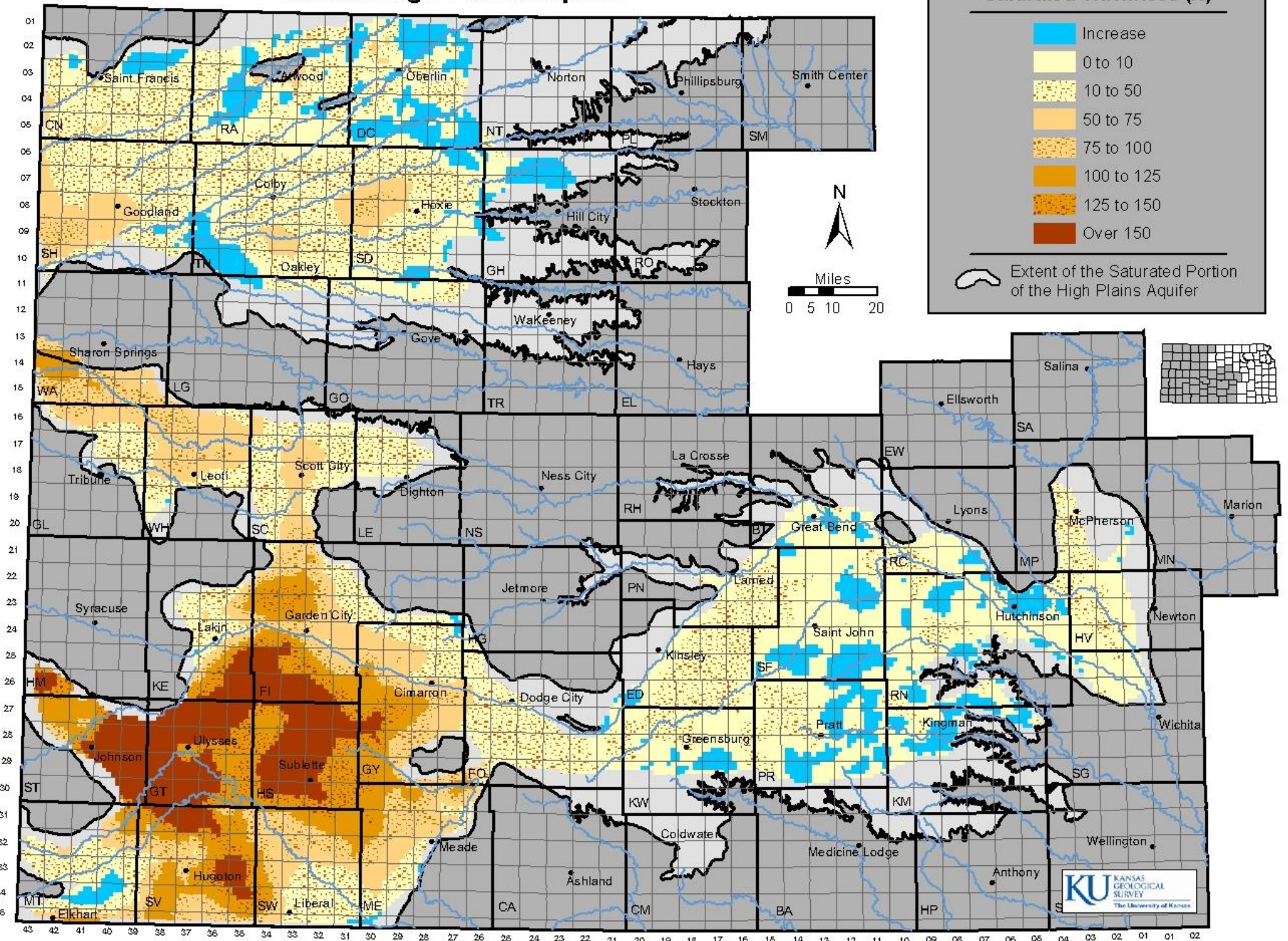
Faculty Development Center,
SUNY Cortland

Change in Saturated Thickness, Predevelopment to Average 2012 - 2014, Kansas High Plains Aquifer

Estimated Decrease in Saturated Thickness (ft)



Extent of the Saturated Portion of the High Plains Aquifer



My dissertation examines Kansas well owners, water conservation, and infrastructure.

- What are Kansas well owners' routines for checking their water supplies, and what are their impressions of well water?
- Does well reliance change the relationship between other demographic variables and pro-environmentalism?

Data collection

- Well owners' addresses located in Kansas Geological Survey's database of Water Well Completion Forms (6.3 percent response rate; 444 responses)
- Sample of Kansans also obtained via Qualtrics (420 responses)

Sample Overview

864 total respondents:

- 452 non-well owners (52%)
- 412 well owners (48%)
 - 147 Domestic, 136 Lawn and Garden, 67 Feedlot, 62 Irrigators
- 380 live in GMDs (44%)

Methods

Let's first examine response frequencies, then consult multigroup regression findings (moderation tests).

Well Owners' Frequency of Checking Water Depth & Chemical Testing

	Water Depth	Chemicals
In the past year	<u>26.7 %</u>	10.9 %
1 – 2 years ago	16.7 %	14.4 %
3 – 5 years ago	17.5 %	16.3 %
GT 5 years ago	13.1 %	21.4 %
Do not check	18.7 %	<u>29.6 %</u>
Unsure	7.2 %	7.4 %

Well Owners' Perceptions of Well's Vulnerabilities

	Frequency
Decreased Water Yields	29.6 %
Contamination Risks	4.5 %
Both	20.1 %
Secure and Reliable	45.8 %

Moderation...

Does the presence or absence of a well change the relationships between commonly used independent variables (sex, income, political views, education, age, and geography) and dependent variables (water saving frequency, ranking water security as a political challenge, voting on water-related policymaking, recycling, using reusable shopping bags, and composting)?

Moderation

Well Owners

[IVs] & Water Saving,
Political Prioritization,
Voting on Water,
Recycling, Reusable
Grocery Bags, Composting

IVs: Sex, Income, Political
Views, Education, Age,
and Geography

Non-Well Owners

[IVs] & Water Saving,
Political Prioritization,
Voting on Water,
Recycling, Reusable
Grocery Bags, Composting

IVs: Sex, Income, Political
Views, Education, Age,
and Geography

Moderation?????

Well Owners	Non-Well Owners
Sex & Water Saving, Political Prioritization, Voting on Water, Recycling, Reusable Grocery Bags, Composting	Sex & Water Saving, Political Prioritization, Voting on Water, Recycling, Reusable Grocery Bags, Composting
Income & Water Saving, Political Prioritization, Voting on Water, Recycling, Reusable Grocery Bags, Composting	Income & Water Saving, Political Prioritization, Voting on Water, Recycling, Reusable Grocery Bags, Composting
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Correlations that change significance across groups:

Well Owners	Non-Well Owners
Sex & Water Saving, Political Prioritization, Voting on Water, Recycling, Reusable Grocery Bags, Composting	Sex & Water Saving, Political Prioritization, Voting on Water, Recycling, Reusable Grocery Bags, Composting
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**Let's focus on the
relationship between
education and age &
the dependent
variables across
these groups...**

Moderation (Education & Age)

...Maybe education leads to better awareness for non-well owners. But well owners are *already thinking about water supplies*, so they don't need more education to make informed voting decisions.

...Age might not be significantly correlated among the well owners because well owners of all ages have a better understanding water supplies.

Well ownership =

Wisdom?

Environmentalism?

***In another study, I established that well owners have significantly higher levels of water literacy (Ternes 2017)

The Broader Arguments:

(1) Well owners have a range of concerns & well monitoring routines.

(2) Some relationships between demographics & environmentalism are moderated by water supply infrastructure.

How can I improve my work?

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- **Publication in *Rural Sociology*:**

“Groundwater Citizenship and Water Supply Awareness: Investigating Water-Related Infrastructure and Well Ownership.”