

Hello Everyone,

Happy March! I hope everyone has the chance to enjoy the warmer weather this next week. This month's Update From the Field topic is about the importance of well water testing. If you have any questions, comments, or would like the full article, please email us at stephanie-mcmillan@uiowa.edu or kelsey-strandberg@uiowa.edu.

Cordially,
Steph & Kelsey

Rural Drinking Water Field Survey in Iowa: Phase One Results and Discussion

Taylor, Ashley. "Rural Drinking Water Field Survey in Iowa: Phase One Results and Discussion." (2019).

Iowa faces water quality issues from nutrient pollution. Runoff of soil, fertilizer, and manure into Iowa's streams and lakes increases nutrient loads of nitrogen and phosphorous to potentially harmful levels and impacts drinking water sources for every citizen in the state. Among the most understudied aspects of the state's water pollution problem is its impact on rural communities. Around 230,000 households in Iowa have well water as their primary source of drinking water, but well water is not regulated by the United States' Environmental Protection Agency. These households are potentially exposed to high levels of nitrate pollution. The objective of this study is to understand households' avoidance behaviors in response to nitrate pollution and to see if a simple information provision such as a testing kit will change households' avoidance behaviors. This paper focuses on the results from phase one of the field experiment. To conduct phase one of the three phase field experiment, we surveyed around

8,000 households in rural Iowa. The baseline survey asked about households' well characteristics, primary drinking water usage, filter usage, water quality testing history, and general awareness of nitrate pollution.

Private Wells and Rural Health: Groundwater Contaminants of Emerging Concern

Lee, Debbie, and Heather M. Murphy. "Private Wells and Rural Health: Groundwater Contaminants of Emerging Concern." *Current Environmental Health Reports* (2020): 1-11.

Approximately 12% of the population in the US and Canada rely on federally unregulated private wells, which are common in rural areas and may be susceptible to microbiological and chemical contamination. This review identifies and summarizes recent findings on contaminants of emerging concern in well water across the US and Canada. Private well water quality modeling is complicated by the substantial variability in contamination sources, well construction, well depth, and the hydrogeology of the environment surrounding the well. Temporal variation in

contaminant levels in wells suggests the need for monitoring efforts with greater spatial and temporal coverage. More extensive private well monitoring will help identify wells at greater risk of contamination, and in turn, public health efforts can focus on education and outreach to improve monitoring, maintaining, and treating private wells in these communities. Community interventions need to be coupled with stricter regulations and financing mechanisms that can support and protect private well owners.

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

Ternes, Brock. "Groundwater citizenship and water supply awareness: investigating water-related infrastructure and well ownership." *Rural Sociology* 83, no. 2 (2018): 347-375.

Due to increased demands for irrigation water, the availability of groundwater has been a growing problem in Kansas, where the future of the High Plains aquifer is in jeopardy. This article investigates the environmental stewardship of Kansas well owners, a key social group whose protection of water supplies is pivotal to prolonging groundwater formations. My guiding research question is: Does owning a well lead to a distinct form of citizenship? To answer this, I constructed one of the only data sets of well owners used in sociology by surveying 864 well owners and non-well owners throughout Kansas. My findings reveal that well owners are more aware of the state's water supplies than the general population, they express environmental motivations to conserve water, they deliberately conserve water more often than non-well owners, and well ownership is significantly correlated with highly ranking water security as a challenge facing Kansas. Furthermore, a majority of well owners check their well depth and test for water contamination, routines that connect them to their water supply. This suggests that well owners exhibit "groundwater citizenship" and can be conceptualized as aquifer stewards.