

ASSESSING HEALTH AND ECONOMIC IMPACTS OF NITRATE POLLUTION: AN ANALYSIS OF FLORIDA PRIVATE WELLS

Weizhe Weng, Brendan Tuliao, Di Fang

University of Florida, Gainesville, FL, USA

Nitrate is a widespread nonpoint source pollutant in the U.S., posing serious risks to environmental and public health. Exposure to nitrate-contaminated drinking water can have negative impacts on human health, particularly in children and immunocompromised individuals.

Due to the presence of the Florida aquifers, groundwater serves as the primary source of drinking water for most Floridians. Like other states in the U.S., private wells are not regulated by the Safe Drinking Water Act, and routine monitoring is not mandated. The lack of comprehensive monitoring and regulation by public agencies shifts the monitoring and treatment responsibility entirely to private well owners. Previous research shows that private well owners often possess a limited understanding of critical aspects in private well maintenance, such as the importance of water quality, potential sources of contamination, and methods for water quality testing. This gap in awareness and preventive measures could lead to uninformed decisions, thereby escalating the associated health risks.

To pinpoint avenues for bolstering private well testing and monitoring, we proposed an integrated analytical framework to quantify both the health and economic impacts associated with nitrate exposure in private drinking wells. This presentation elucidates the methodologies employed to link environmental testing outcomes with potential economic and health outcomes. It also offers a synopsis of preliminary findings derived from the analysis of existing well testing data in Florida.

PRESENTER BIO: Dr. Weng is an Assistant Professor in the Food and Resource Economics Department at the University of Florida. As an environmental and natural resource economist, she has published 16 papers on topics related to the valuation of ecosystem services, water policy, climate change, and coupled and human natural systems.