



Driftless Prairies: Native Ecosystems

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Karst and Groundwater: What does this mean to you?

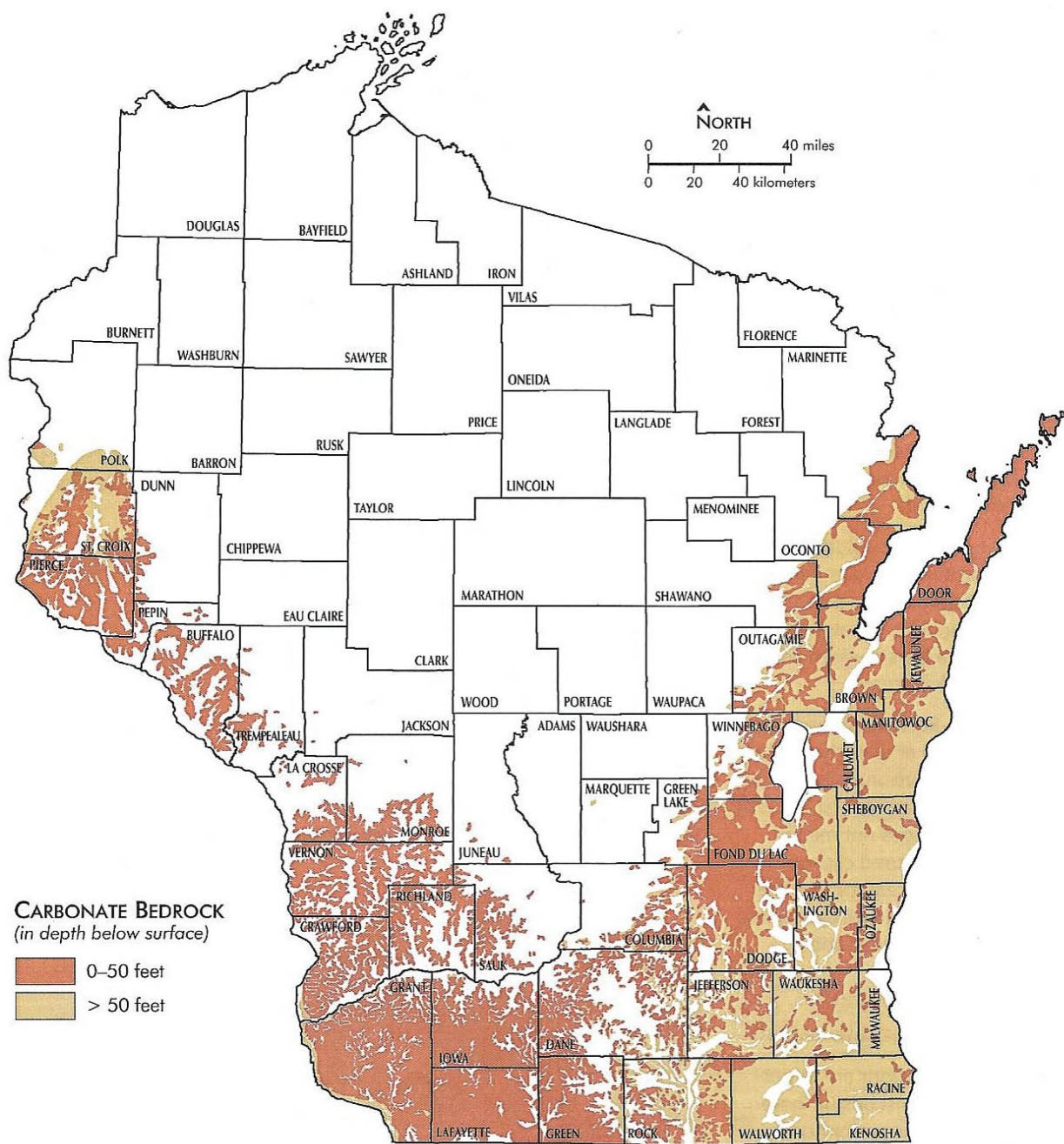
The Karst Workshop offered by the Lafayette County Conservation and Zoning Office on March 30, 2017 was a full house with around 65 attendees. Two important points were conveyed to the audience: an understanding of what a karst landscape means and how this affects your well and drinking water.

The Driftless Area (southwest Wisconsin) is mainly a karst landscape. What does this mean? Karst is a type of landscape formed by the dissolution of its underlying limestone and dolomite (also called carbonate bedrock). The acidic nature of rain and snow (pH of 5.7) causes these rocks to dissolve, creating fractures in the land, sinkholes, caves, and springs.

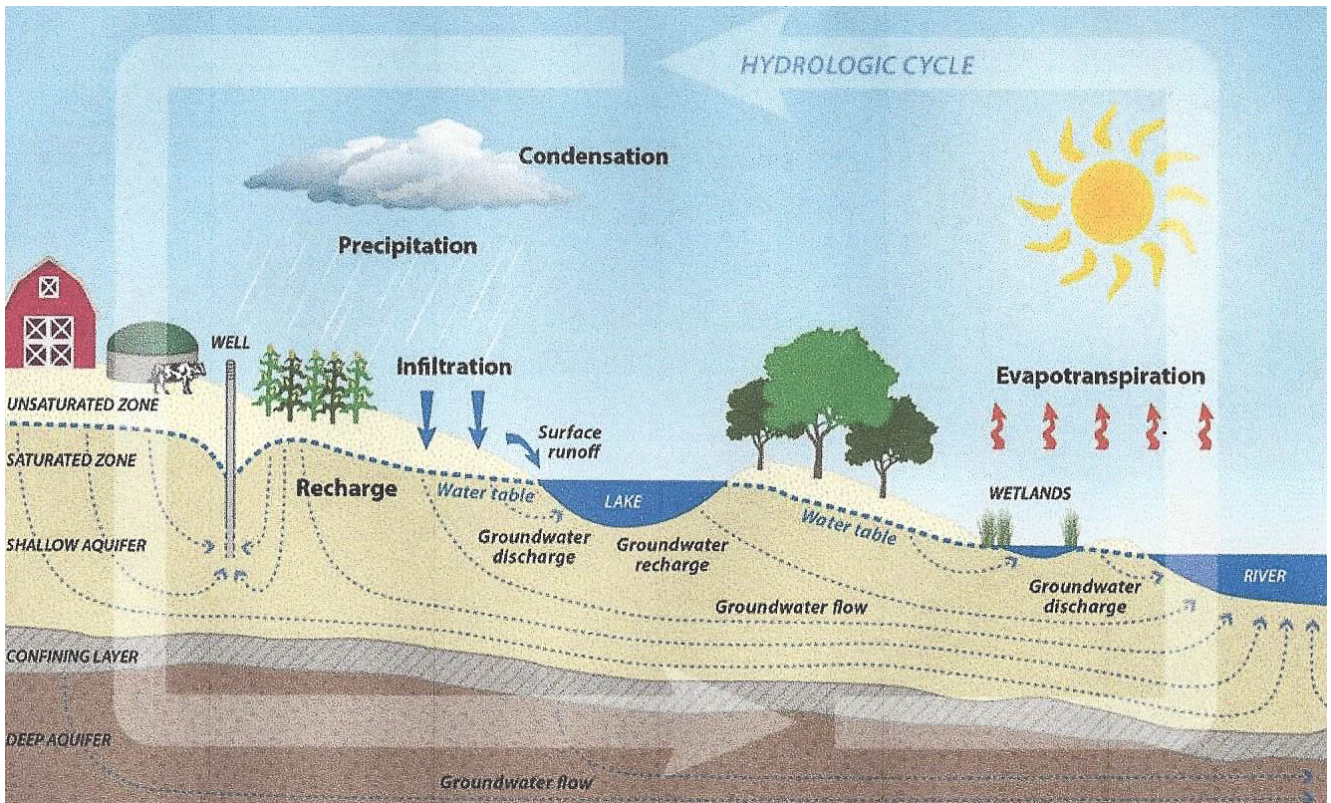
To visualize what our fractured karst bedrock looks like from underground think of Cave of the Mounds.

These carbonate formations are the aquifers that provide water to our homes, farms, businesses, and industries. It maintains our lakes, streams, and wetlands, too. In addition to being a karst landscape, most of the bedrock is 0-50 feet below the soil surface. This means it is more vulnerable to contamination than bedrock found deeper in the ground. Why is this? Gravel and sand on top of this bedrock would slow the water down but in a karst landscape, where this doesn't exist, fractures in the stone are like water running down a slippery slide, directly into our groundwater aquifer – our drinking water supply. There's nothing to filter out contaminants as these aquifers are refilled with rain and snowmelt.

The map to the right shows the depth of carbonate bedrock in Wisconsin. Courtesy of WGNHS.



The depth of your well and casings is imperative to know. Since the water in karst landscapes has no filtering device, it must be drilled deep enough to reach a “confined aquifer” – a water containment area below an impermeable layer. Anything above this confined aquifer can become easily and highly contaminated. In this diagram, it is easy to see the fractured areas and the confined aquifer.



Presenters gave examples of families becoming ill due to well contamination. These contaminants come from manure runoff, septic systems, chemical spills and runoff from road salts. What can you do to keep your family safe? Prevent erosion on your land, ensure your well is drilled to the appropriate depth (see resources), and test every 18 months. Since most of your drinking water comes from within 2 miles of your home or business, spread the word and educate your neighbors.

Some results from Iowa County and Lafayette County well tests will emphasize the need to test. In Iowa County, 1318 wells were tested: 13% exceeded the safe drinking standards for nitrates, 40% have detectable amounts of atrazine, and 26% tested positive for coliform bacteria.

In Lafayette County, of 1023 wells tested 17% had nitrate levels over the acceptable standards and of 156 wells tested for arsenic had 4% over the drinking water standard.

Living in The Driftless Area makes us pretty lucky, but it also means we need to take extra precautions and be

conservation minded in our land practices in order to maintain quality drinking water.

Lafayette County Health Dept (608-776-4895) has free testing kits available; you pay for the actual testing.

DNR list of [private well testers](#)

Check out the Center for Watershed Science and Education for more info

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