



Ray Mueller
Town of Brothertown, Calumet County

Karst Geology and Clean Drinking Water

Wisconsin League of Conservation Voters Internship

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Abstract

The Wisconsin League of Conservation Voters (WLCV) is a non-profit, non-partisan organization that is dedicated to electing conservation leaders, holding decision makers accountable and encouraging lawmakers to support conservation policies that effectively protect Wisconsin's public health and natural resources.¹ Cartographically displaying the concentration of members around the state who were in attendance of Conservation Lobby Day, WLCV was able to focus on the location of strong and weak conservation minded voting districts in WI. One of the main conservation issues of focus for WLCV is the groundwater contamination of local wells in 13 counties in northeastern WI and how karst bedrock geology encourages this. With local industry being primarily agriculture, the spread of manure and treated sewage on fields is seeping into the groundwater due to the local bedrock geology. This is a priority issue of the WLCV and their endorsement of WI legislators. The data and research of the distribution of members and support of clean drinking water research are key components to such endorsement.

¹ Adapted from WLCV mission statement

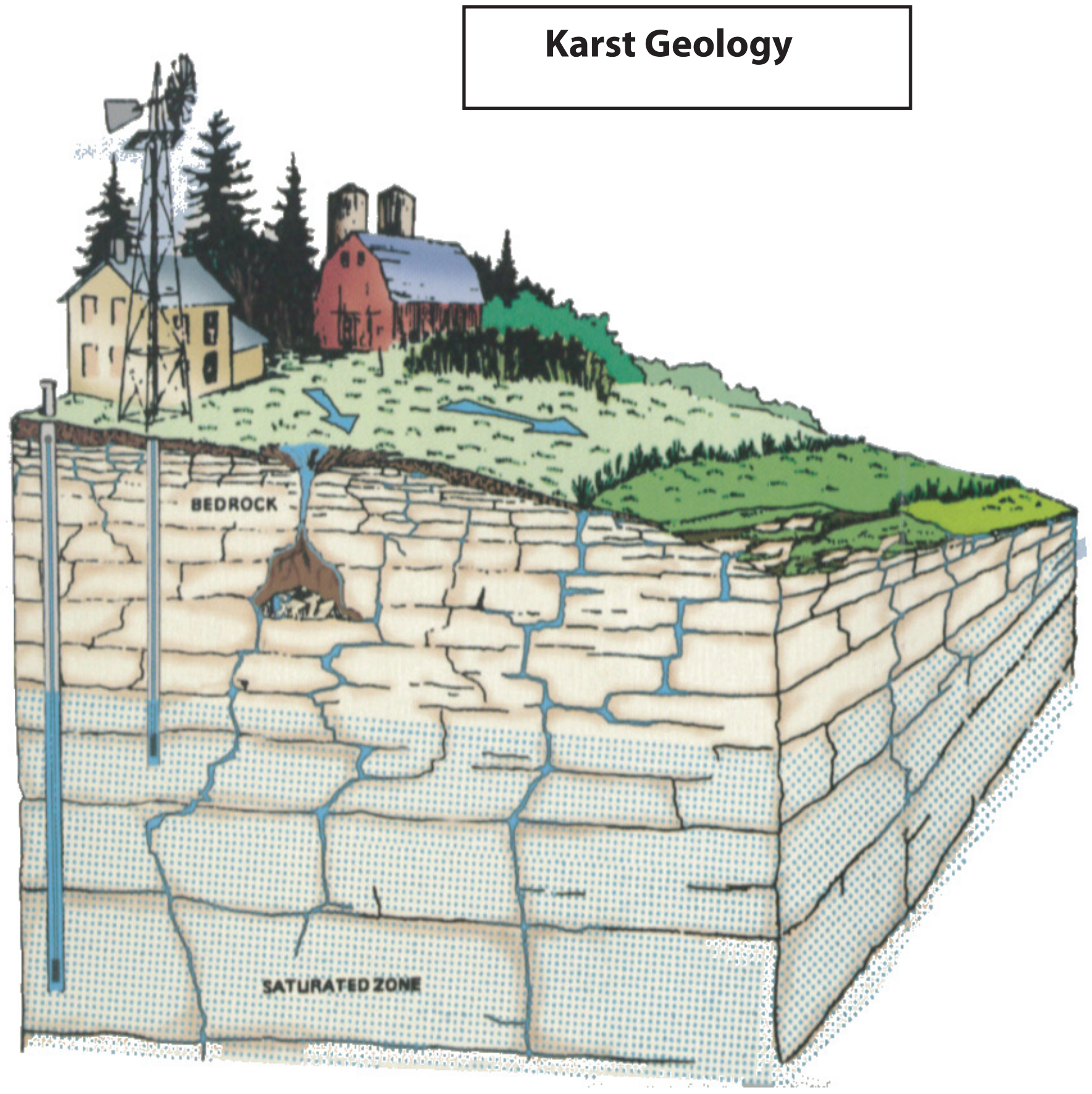
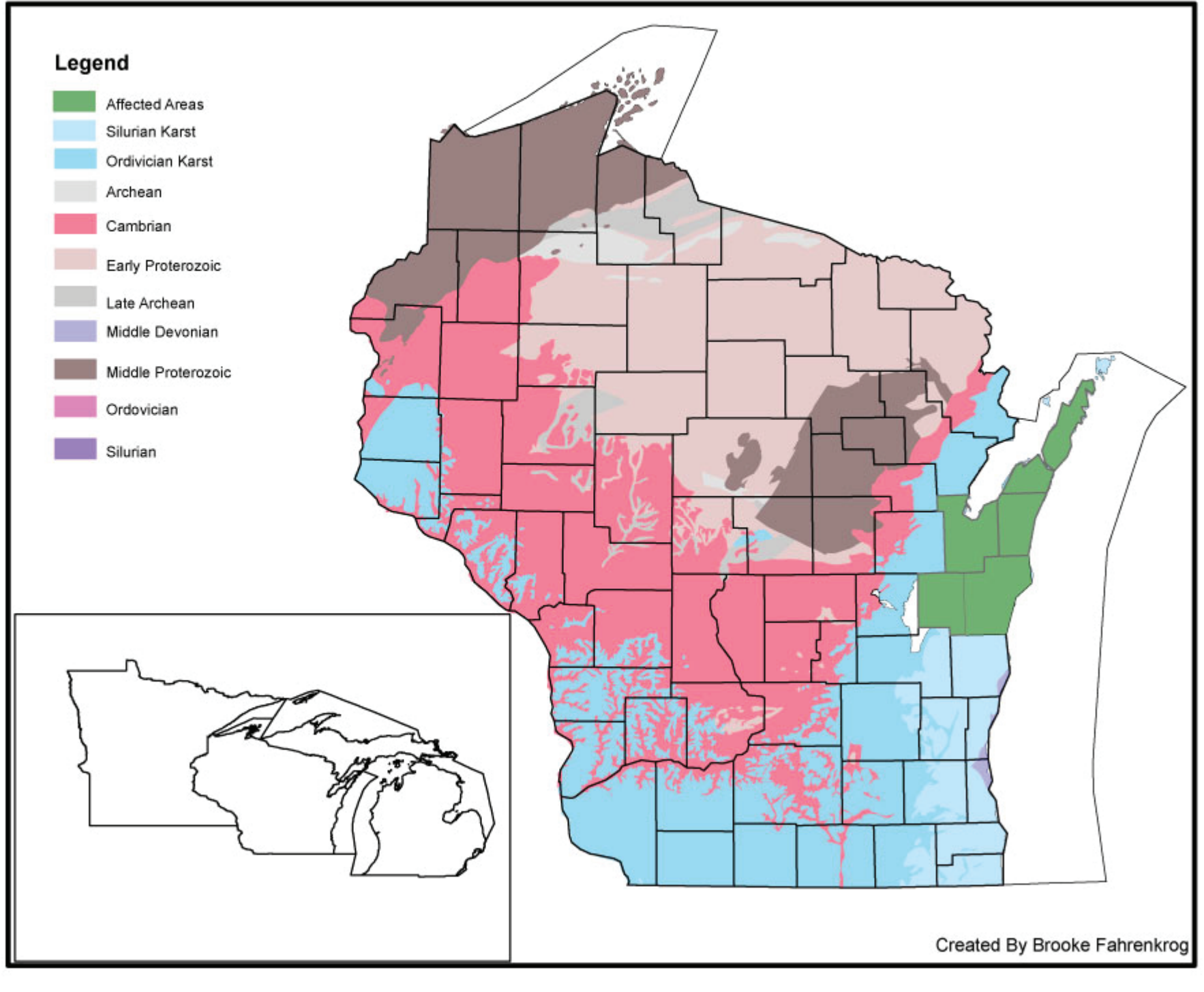
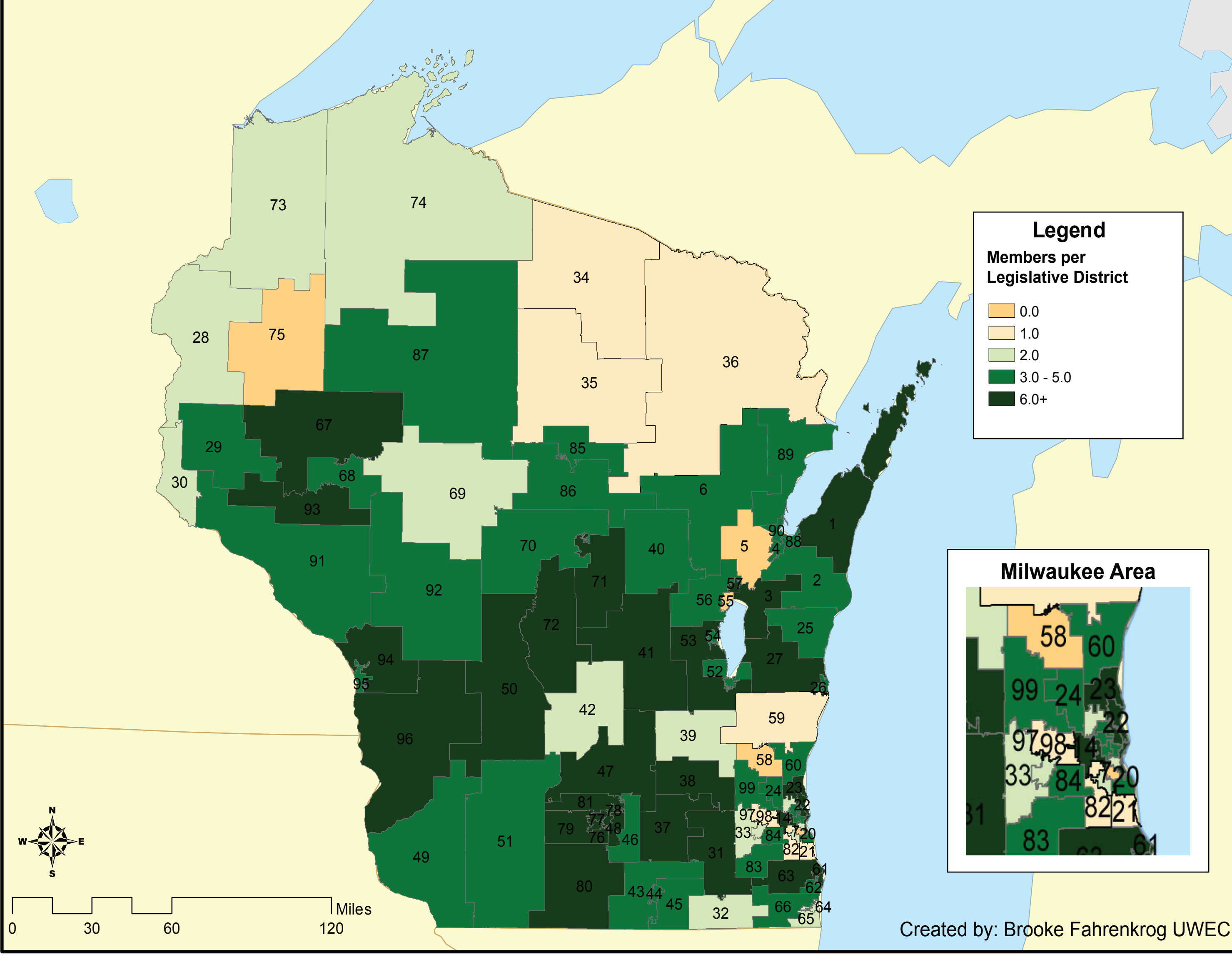


Image from karst pamphlet produced by Rock River Coalition, Inc and the University of WI Cooperative Extension

WI Geology Affected Area



2010 Conservation Lobby Day Attendance



Created by: Brooke Fahrenkrog UWEC

One of the four primary conservation issues of the WLCV this year is 'Clean Drinking Water' and how the local bedrock geology affects this.

Due to the carbonate geochemistry of the bedrock in Northeastern, WI; this area is more susceptible to groundwater pollution. As the rock weathers it cracks, because of the rock's geochemistry it will also begin to create pockets of open spaces as the calcium and carbonates chemically interact. This leaves spaces in the subsurface where waste water and rainwater would typically be naturally filtered and stripped of nitrates, phosphates, and other health-hazardous compounds that had been introduced on the surface. Without the geologic time or appropriate setting the water is remaining contaminated and introduced into point wells in the subsurface. The water running off of farmer's fields is being taken up by wells complete with what it was introduced to on such fields. The water becomes contaminated and unsafe to drink. This is no fault of the farmers, but fault of the geology under the farm fields. In order to control such contamination, extensive geologic mapping will need to be done to determine the areas of potential risk. Then, action can be taken to minimize the amount of contaminates entering into the local groundwater.

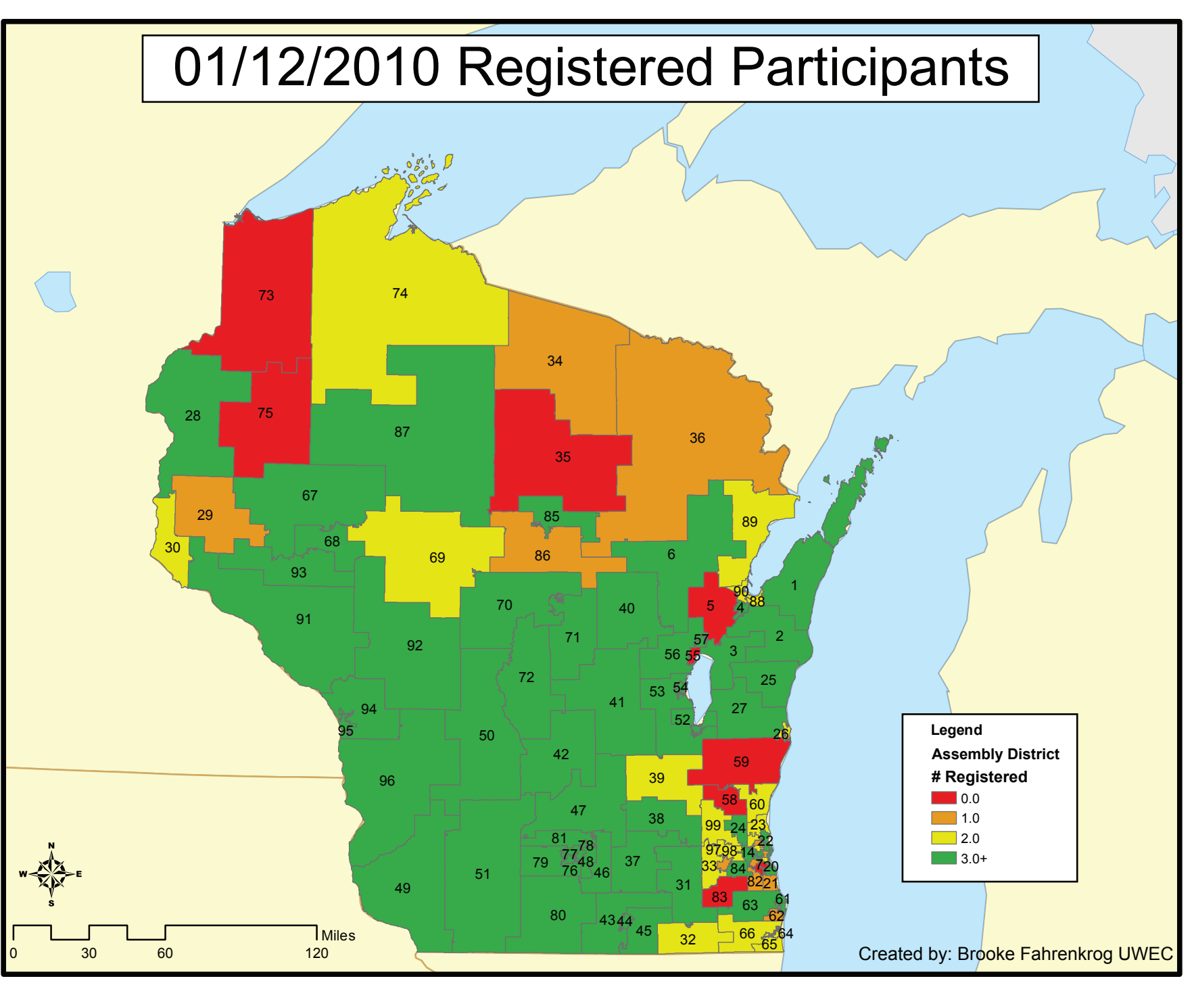
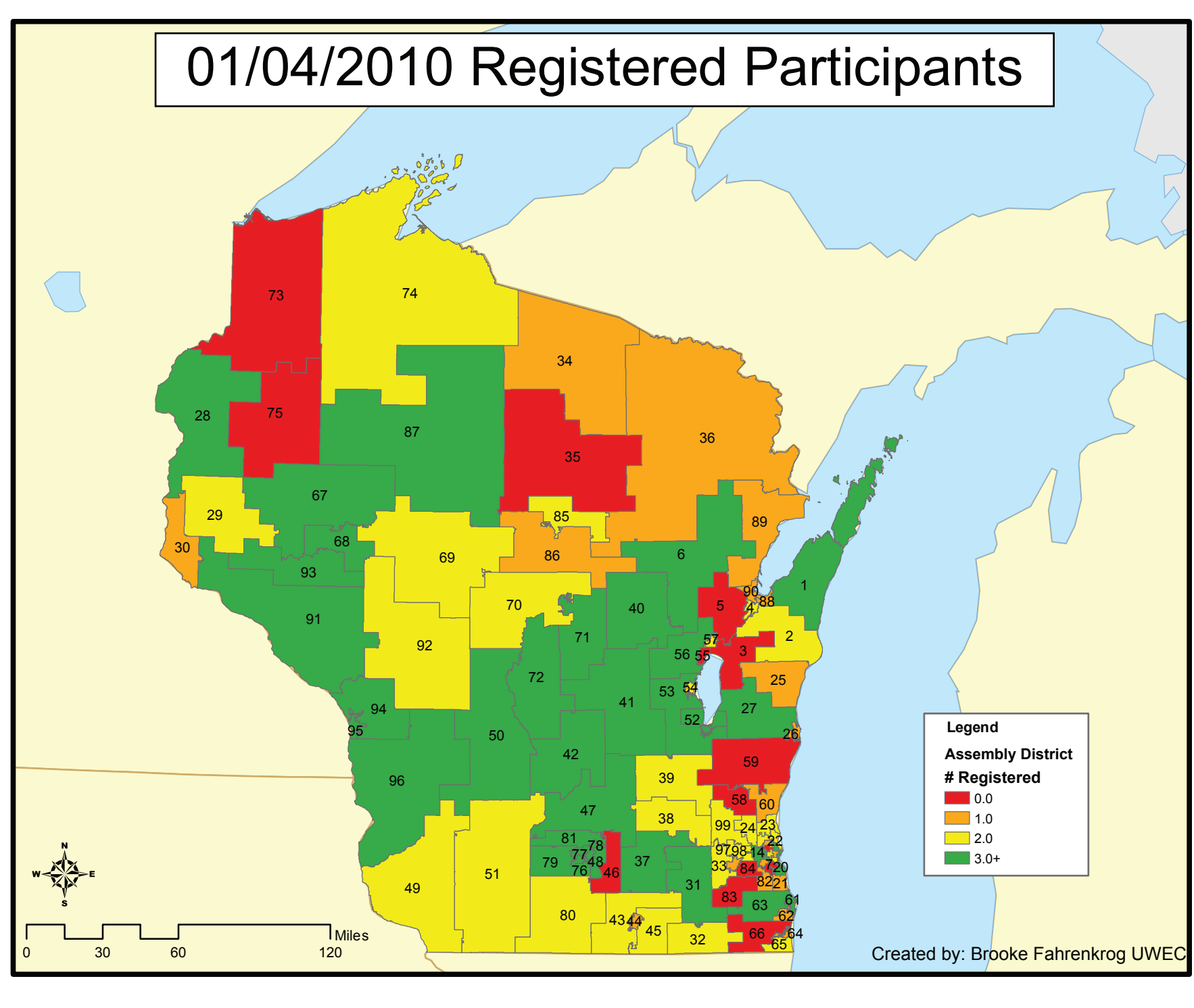
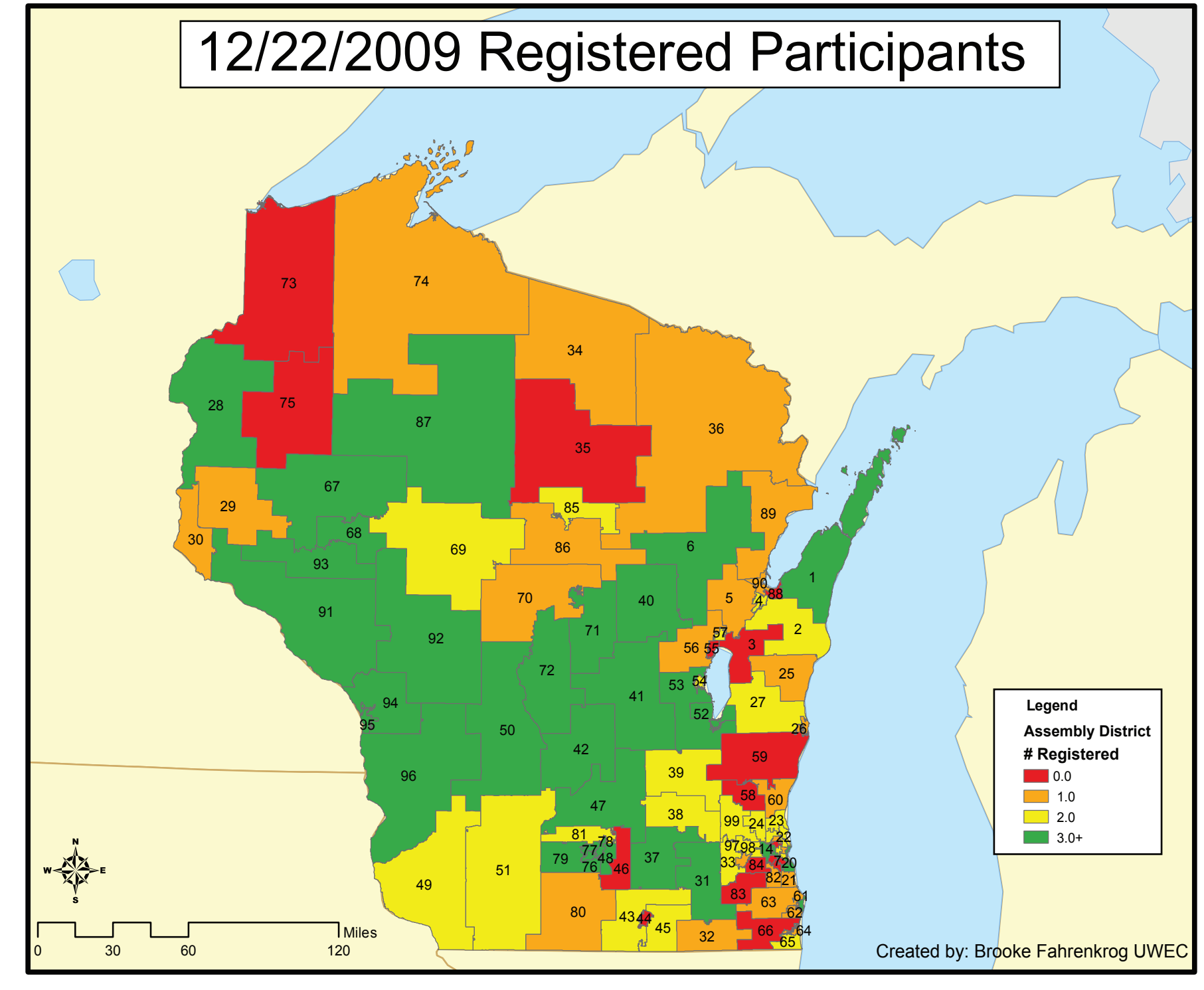
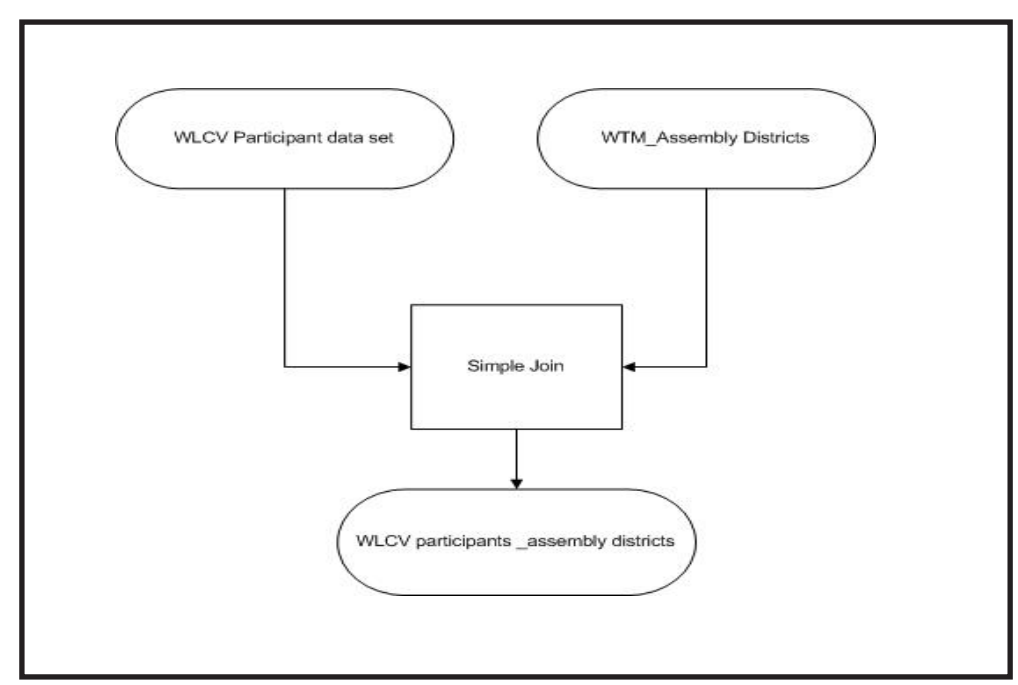
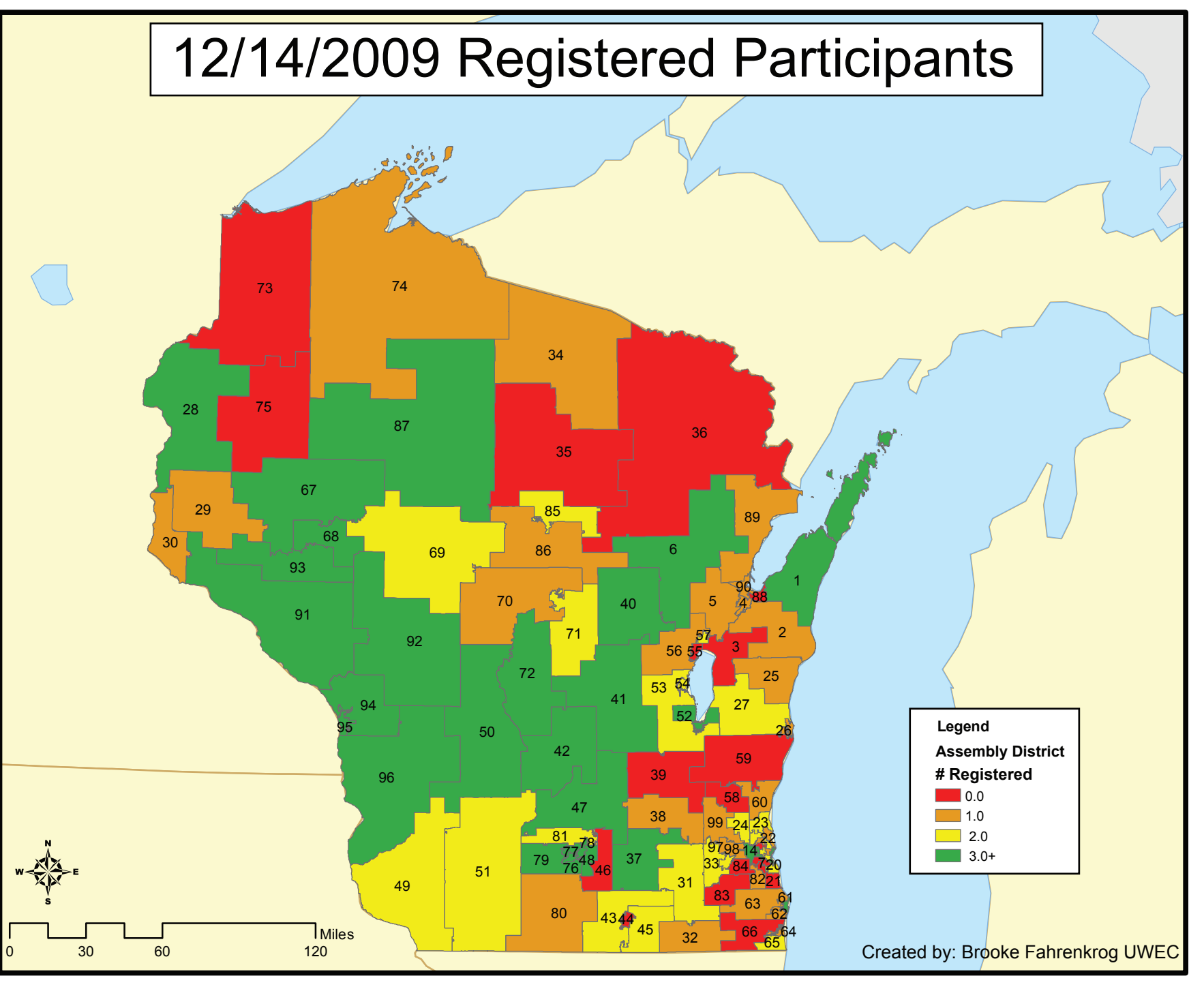
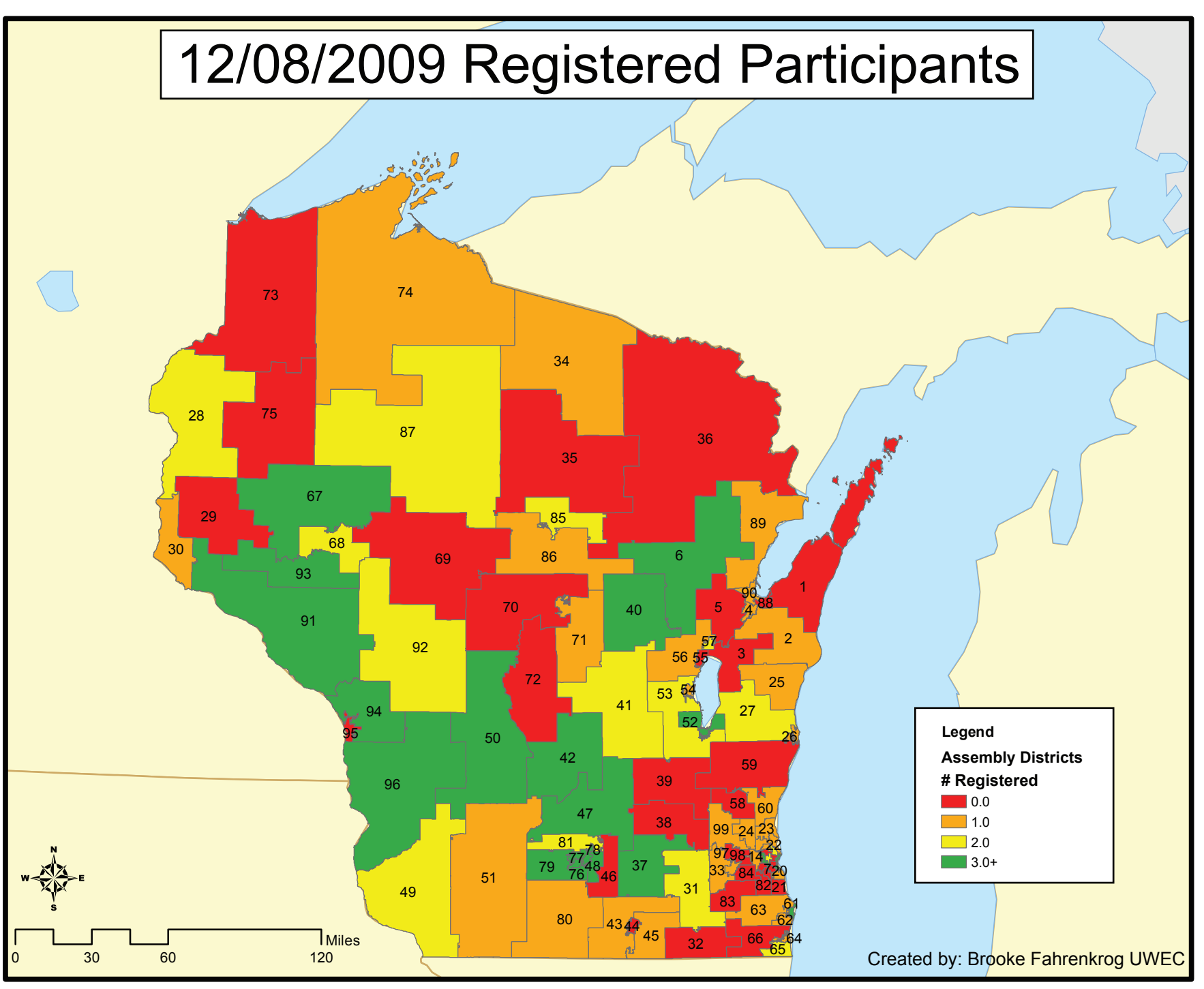
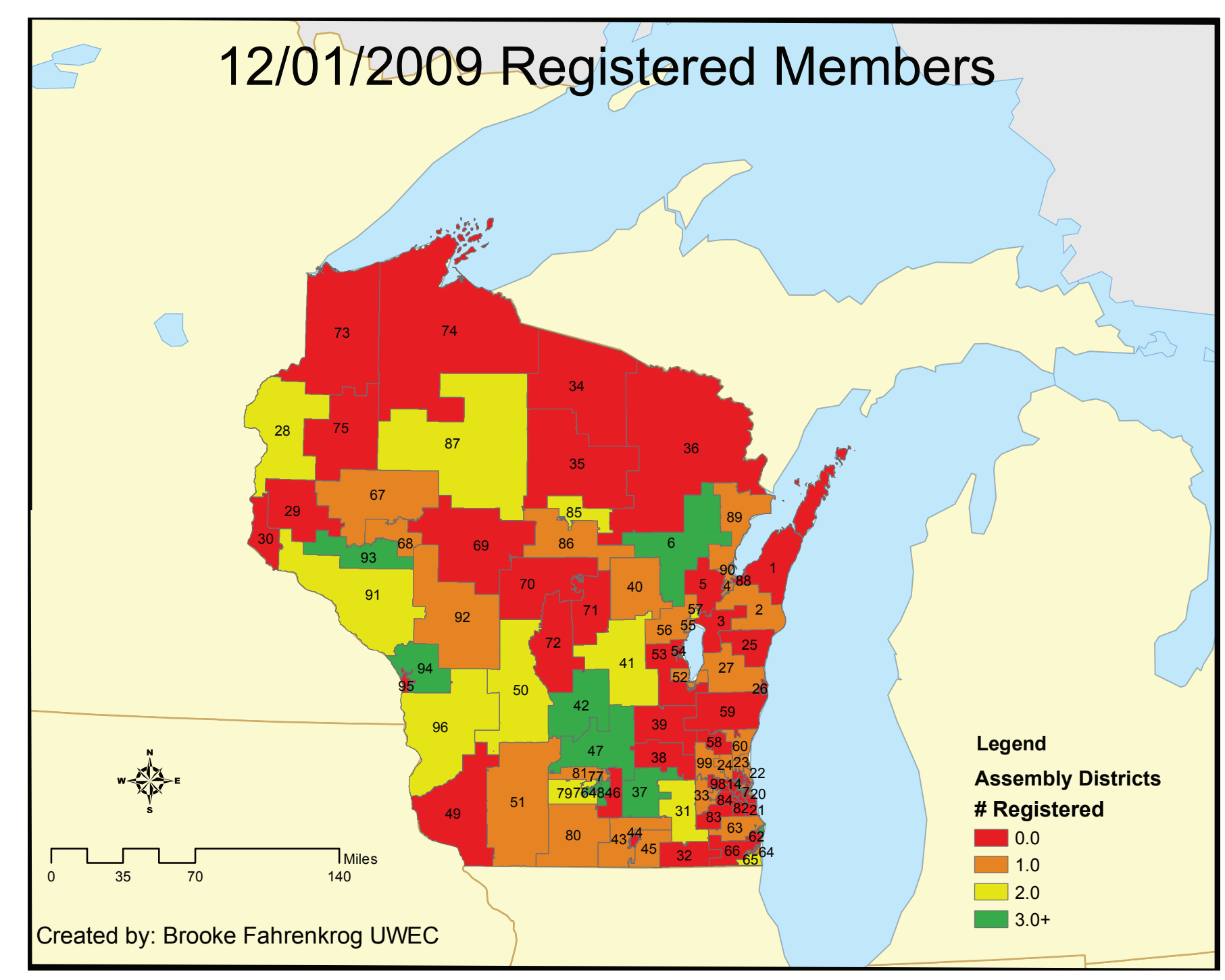
What is Conservation Lobby Day?

Conservation Lobby Day is a day where voters, and WLCV members, from all over the state come to Madison to attend workshops, and be an active lobbyist for the day. Each attending member has the opportunity to meet with their respective Senate and Assembly representative. This is an opportunity to meet with Representatives and discuss priority conservation issues. This year WLCV sponsored:

1. Restoring Conservation Integrity by overturning the Governor's Veto and electing an independent DNR secretary
2. Preserving Wisconsin's Groundwater
3. Minimizing the impacts of Global Warming in Wisconsin
4. Protecting Wisconsin's drinking water by mapping karst bedrock geology and minimizing the use of fertilizers, pesticides and other contaminants on such geologic areas.



Chuck Wagner
The jar on the left is tap water from Luxemburg located in Kewaunee County, April 13, 2008.



Each week I would receive an updated excel-spread sheet from our home office in Madison, WI that would contain member data. Breaking the data down into legislative districts, by Assembly, the branches could analyze which districts needed more representation, or were lacking member attendance. The goal of the WLCV was to get at least three voter members to attend the Conservation Lobby Day conference. It was my job to compile data, and create maps every week.

Collaborators:
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 Wisconsin League of Conservation Voters
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References:
 Wisconsin League of Conservation Voters. 2009 Conservation Priority Issues. <http://www.conservationvoters.org/Public/index.php?custid=89>
 Wisconsin League of Conservation Voters. Issues: Protect Wisconsin's Drinking Water. <http://www.conservationvoters.org/Public/index.php?custid=95>