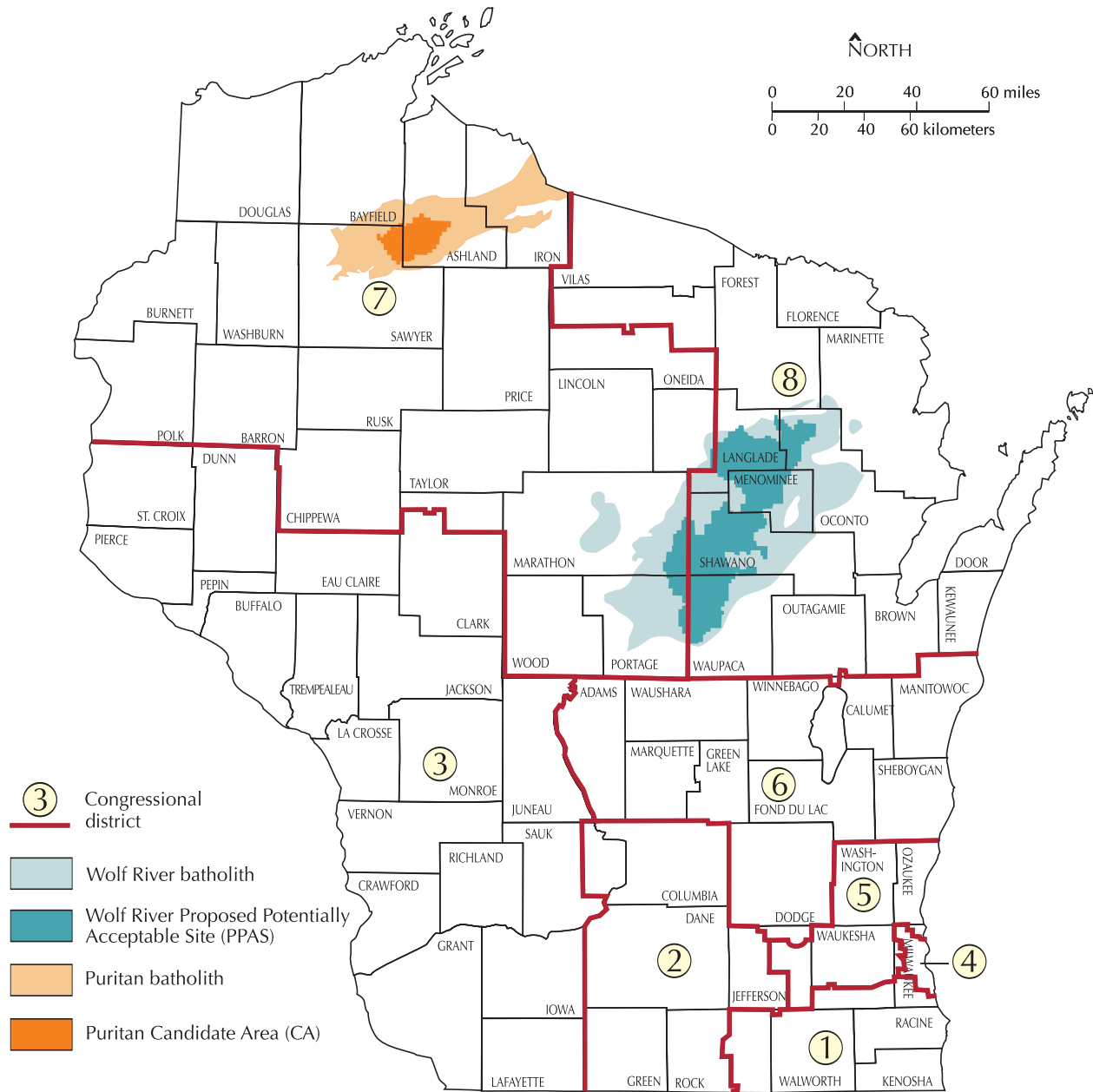


Granitic batholiths: A brief history of DOE's 1980s search for potential high-level radioactive waste disposal sites in Wisconsin



Batholiths are large bodies of intrusive igneous rock. Several batholiths are at or near the surface in central and northern Wisconsin. These bodies, mainly granitic in composition, range from 2.75 to 1.45 billion years old. Two batholiths, the Wolf River and the Puritan, are shown here.

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- The need for the disposal of high-level radioactive waste safely, equitably, and permanently led Congress to develop the Nuclear Waste Policy Act of 1982 to guide the U.S. Department of Energy's (DOE) investigations of a variety of rock materials suitable for hosting an underground geological repository. The act mandated that two potential repositories be identified—the first, to be located in the western United States and contained within salt, volcanic tuff, or basalt; the second, to be located in the eastern United States and contained within granite.
- In 1981 the Wisconsin Legislature created a Wisconsin Radioactive Waste Review Board (RWRB) to serve as a liaison between the state and the federal government as potential Wisconsin sites for high-level radioactive waste disposal were being evaluated. The RWRB was also charged with ensuring the maximum amount of public participation in the process. The State Legislature disbanded the RWRB in 1995.
- In January 1986, the DOE officially identified 20 potential repository sites in the eastern United States that were, in its judgment, worthy of further evaluation—12 Proposed Potentially Acceptable Sites (PPAS) in seven states and eight lower-ranked Candidate Areas (CA) in four of the same seven states.
- Two Wisconsin areas were included in the DOE listing:
 - A part of the Wolf River batholith (as a PPAS)
 - A part of the Puritan batholith (as a CA)
- In late 1987, Congress directed the DOE to focus its resources on evaluating Yucca Mountain, Nevada, as a potential first repository. At the same time, Congress directed the DOE to suspend the eastern (or granite) repository search until at least 2007 and to conduct no further investigations related to disposal in granite.
- The Puritan batholith CA was never a serious repository prospect because of its relatively small size (171 square miles), lack of adequate information to characterize the geology of the area, and proximity to the Department of Defense's Extremely Low Frequency (ELF) radio communications site.
- The Wolf River batholith PPAS is an almost 1,100 square mile area of northeast Wisconsin that contains several Native American reservations along with much of the upper reaches of the Wolf River—a state-designated Outstanding Resource Water. In addition, analysis of numerous water wells in the area by scientists from the Wisconsin Department of Natural Resources and the Wisconsin Geological and Natural History Survey showed that much of the batholith is extensively fractured and contains substantial groundwater. According to DOE's own guidelines, these are undesirable geologic characteristics for a granite-hosted repository.

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