

## Investigation of Methylmercury in Reservoirs in Indiana, 2009

In 2009, the U.S. Geological Survey (USGS) completed an initial investigation of total mercury and methylmercury in three U.S. Army Corps of Engineers (USACE) flood-control/water-supply reservoirs in Indiana—Monroe, Patoka, and Brookville (fig. 1). The results from USGS monitoring of mercury in Indiana streams, 2002–2006 (Risch and others, 2010; Ulberg and Risch, 2008) had indicated high percentages of methylmercury in water samples downstream of several USACE reservoirs in Indiana. When USGS notified the USACE of these results in 2009, it was decided that a detailed investigation of mercury in several USACE reservoirs was needed. The three reservoirs were selected after consideration of data from State monitoring of mercury in fish tissue in USACE reservoirs in Indiana. These data indicated the highest mercury levels in fish were in Monroe and Patoka. Brookville was selected because of concern for sport fishing downstream.

In cooperation with the USACE, the first sets of data for the reservoir mercury investigation were collected in July 2009 during conditions of summer thermal stratification in the reservoirs. In total, the 65 water samples were collected for analysis of mercury and supplementary constituents, over a thousand measurements of water-quality constituents were compiled, and 42 bathymetric-survey transects were completed. Water samples for mercury analysis were collected with ultra-clean protocols and mercury concentrations were determined with low-level methods capable of quantifying less than a part per trillion mercury.

The results of the investigation will be published in a USGS Scientific Investigations Report in early 2011.



### Field Methods (clockwise from above left:

Probe for electronic multimeter to measure water-quality constituents; on-site determinations of parameters; mobile laboratory for sample processing; ultra-clean protocols for low-level mercury sample collection



US Army Corps of Engineers

**Investigation of Methylmercury in Reservoirs in Indiana, 2009 -- continued**

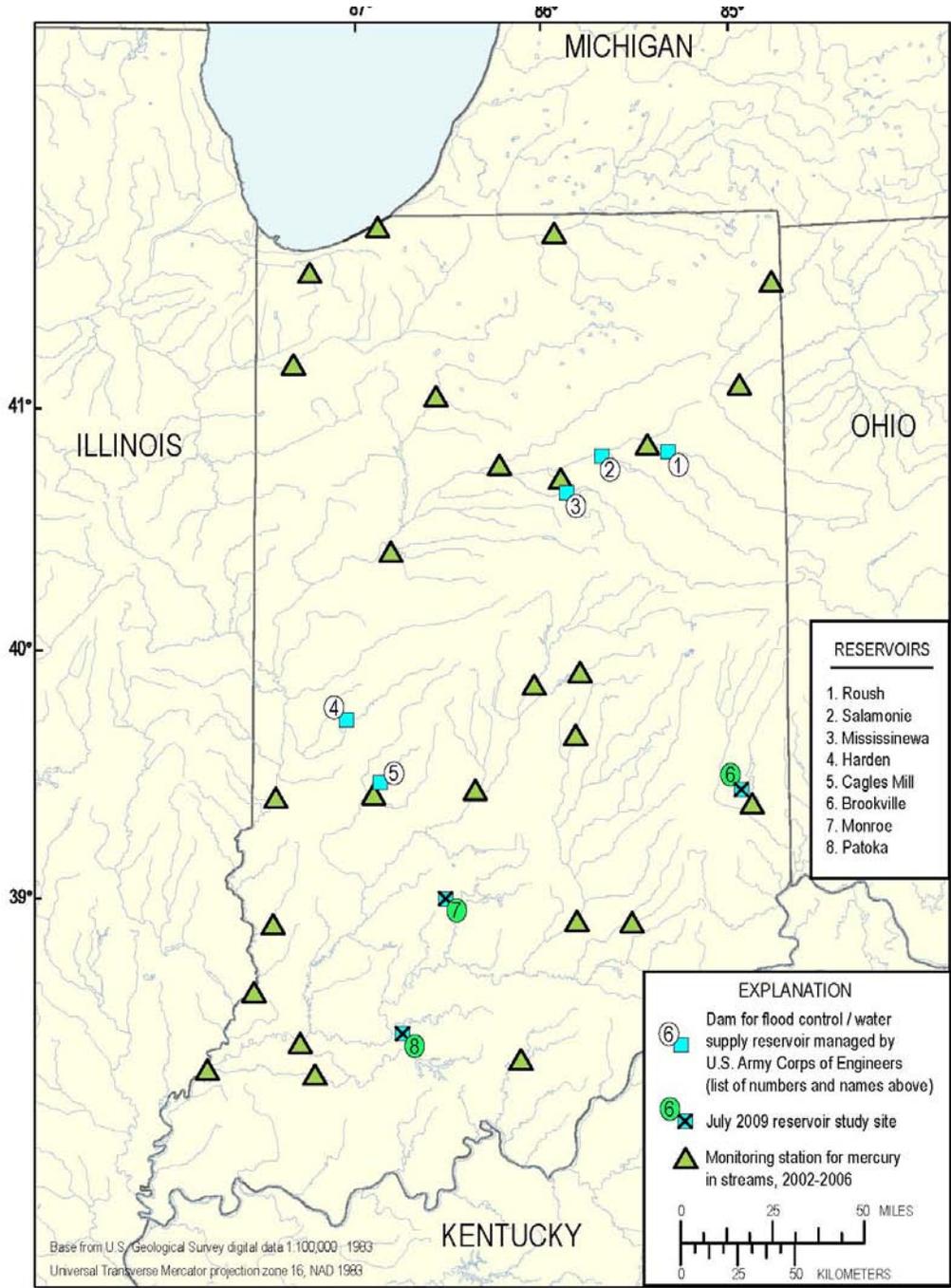


Figure 1. Locations of U.S. Army Corps of Engineers reservoirs in Indiana, with U.S. Geological mercury in reservoirs 2009 study sites and 2002-2006 mercury in streams study sites.

For more information,  
 contact the USGS project chief:  
 Martin Risch ([mrrisch@usgs.gov](mailto:mrrisch@usgs.gov))  
 317-290-3333 x.163



US Army Corps of Engineers