Water quality in the Allegheny and Monongahela River Basins is generally good – with some exceptions

Stream and groundwater quality in many areas of the Allegheny and Monongahela River Basins is improving and is, in many respects, better than or comparable to what is found nationally, according to the results of a 5-year investigation by the U.S. Geological Survey (USGS).

“The quality of rivers around Pittsburgh has really improved in the last 20 years, especially for fish,” said USGS biologist and principal author, Robert Anderson. “A lot of people still think of these rivers as polluted as they were in the 1960’s, but if someone wanted to go fishing for bass or walleye, they could do very well right in downtown Pittsburgh.”

Compliance with regulations that control water discharged from active coal mines has been a factor in the improvement. In addition, government agency and citizens groups have been very active in focusing funding and energy on treatment of water from abandoned coal mines in Pennsylvania, West Virginia, New York, and Maryland.

“Coal mining remains the largest single factor affecting water quality in a large part of the Allegheny and Monongahela River Basins,” said Steve McAuley, Project Chief. “We are not seeing new sources of highly acidic discharges but the water leaving coal mines does differ from water in unmined areas.” Where treatment has not occurred, the water is generally acidic (low pH), and contains elevated concentrations of metals and sulfate. Sulfate concentrations are five times greater in streams draining mined areas than in streams draining unmined areas. In addition, the diversity and abundance of aquatic organisms remain reduced in comparison to areas where there has been no coal mining. These results are based on well and stream samples from more than 180 sites in the coal-bearing region.

The region’s water quality is influenced by more than coal mining. Past pollution still lingers in the form of PCBs, chlordane, and DDT. The use of these compounds has been prohibited for two decades but they remain in fish tissue samples and in river sediments. For example, PCB’s were detected in 43 percent of the total stream sediment and fish samples tested.

Mixtures of currently used pesticides were detected in some agricultural and urban streams and well water. Concentrations of the individual compounds were usually lower than guidelines for drinking water or protection of aquatic life. The potential risk, however, can only be partially
addressed because standards and guidelines are not available for all measured compounds, and they do not consider exposure to mixtures of chemicals.

“Some areas in the Allegheny and Monongahela River Basins appear to be of much better quality than the national average. The amount and types of life living in some forested and agricultural areas are among the most diverse in the Nation,” said Anderson, “which is something to be proud of.”


This assessment is part of the National Water Quality Assessment (NAWQA) Program conducted by USGS investigating water-quality conditions in more than 50 major river basins and aquifers. This program is currently releasing results on surface and ground water in 15 additional major river basins. Access the individual basin reports on the NAWQA website, in addition to other NAWQA publications and national data sets and maps.


Further detail regarding pesticides and nutrients can be obtained from Water-Resources Investigations Report 00-4061, “Nutrients and Organic Compounds in Deer Creek and South Branch Plum Creek in Southwestern Pennsylvania, April 1996 through September 1998,” by Donald R. Williams and Mary E. Clark. These reports are available on the web at http://pa.water.usgs.gov/pa_pubs.html. A limited supply is available at the USGS office in New Cumberland at 215 Limekiln Road, New Cumberland, Pennsylvania 17070; telephone (717) 730-6916 and the USGS office in Pittsburgh at 1000 Church Hill Road, Suite 200, Pittsburgh, Pennsylvania 15205; telephone (412) 490-3800.

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