

Atrazine contamination in Ohio



Atrazine contamination is widespread in Ohio. Scientific studies have linked atrazine to a higher risk of prostate cancer, and hormonal, cardiovascular, lung and kidney problems in humans; sexual and hormonal abnormalities in frogs, fish and reptiles, and to decreased production in aquatic plants. Unfortunately, USDA allocated only 3% of EQIP funds for pest management in Ohio from 2003 through 2005. A last minute provision added to the House 2007 Farm Bill, sponsored by pesticide manufacturers, would bar USDA from encouraging alternatives to “specific” pesticides like atrazine in the future.

Atrazine contaminates Ohio’s drinking water and environment:

- Data obtained from public water systems by the Environmental Working Group (EWG) show that 2.3 million people in Ohio (23 percent of the population) were exposed to atrazine in their drinking water above state or federal health-based limits between 1998 and 2003.¹
- Seventeen of the 22 public water systems monitored in Ohio as part of a special drinking water supply monitoring program from 2003 to 2005 had average concentrations above the EPA drinking water standard in their raw water for at least one 90-day period. Atrazine concentrations in the finished water served to customers were not reported.²
- A U.S. Geological Survey study of the Great and Little Miami River watersheds conducted from 1999 to 2001 found atrazine in 98 percent of the 184 samples analyzed, and detected concentrations as high as 19 ppb in the East Fork of the Little Miami River.³ This concentration is 19 times the 1 ppb level that has been found in scientific studies to cause reproductive abnormalities in fish and amphibians^{4, 5} and nearly twice the EPA 10 ppb aquatic-community effect level.
- Four Ohio watersheds monitored through an Ecological Watershed Monitoring Program (2004-2006) ordered by EPA had average atrazine concentrations ranging from 0.81 to 1.55 ppb, and maximum concentrations ranging from 18.3 to 21.5 ppb, approximately twice the EPA 10 ppb aquatic-community effect level. Maximum concentrations (spikes) are a greater indicator of risk than averages because they may indicate the “tip of the iceberg” for other spikes that are difficult to detect through intermittent monitoring; many health and ecosystem impacts may result from repeated short-term, high-level exposures; and single exposures during biologically sensitive periods (eg pregnancy, childhood development) can cause serious injuries.

Atrazine in surface water in four monitored Ohio watersheds, Ecological Watershed Monitoring Program⁶

Watershed	Years sampled	Number of samples analyzed	Number of samples containing atrazine	Maximum atrazine concentration (ppb)	Number of samples with concentrations above:	
					3 ppb*	10 ppb
Kokosing River	2004-05	73	53 (73%)	18.34	5	2
North Fork Licking River	2005-06	75	67 (89%)	18.13	6	2
Mad River	2004-05	170	65 (38 %)	21.5	26	7
Deer Creek	2005-06	75	47 (63%)	20.15	6	1

*3 ppb = EPA drinking water standard (Maximum Contaminant Level, or MCL).

1 Environmental Working Group, National Tap Water Quality Database, <http://www.ewg.org/tapwater/index.php> The State of California has established a Public Health Goal for atrazine of 0.15 parts per billion (ppb), while the U.S. Environmental Protection Agency (EPA) has set a drinking water standard and a Maximum Contaminant Level Goal (MCLG) of 3 ppb.

2 U.S. Environmental Protection Agency, Summary of 2003 – 2005 AMP Results, August 2006, on-line at http://www.epa.gov/oppsrrd1/reregistration/atrazine/amp_2003_2005_sum.pdf

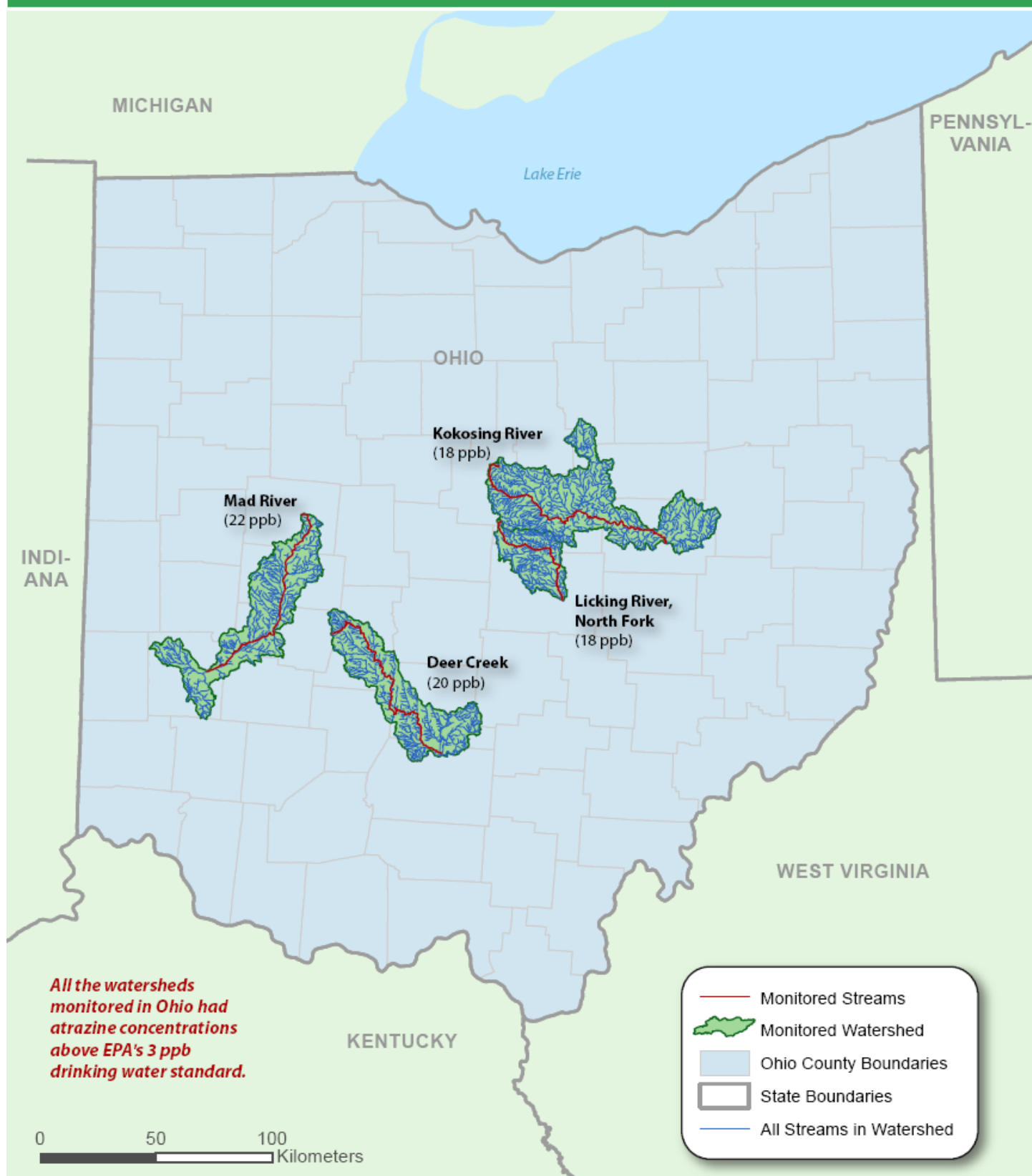
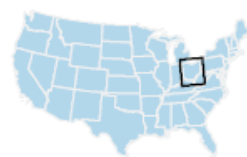
3 Rowe et al., 2004, Water Quality in the Great and Little Miami River Basins, Ohio and Indiana, 1999-2001: U.S. Geological Survey Circular 1229, 50 p.

4 Hayes, T, et al. 2001. Atrazine disrupts sex differentiation in the African Clawed Frog (*Xenopus laevis*) at ecologically relevant doses, presentation at SETAC (Society of Environmental Toxicology and Chemistry) meeting, Baltimore, Nov. 14, 2001.

5 Moore, A. and N. Lower. 2001. The impact of two pesticides on olfactory-mediated endocrine function in mature male Atlantic salmon (*Salmo salar* L.) parr. Comp.Biochem.Physiol. B 129:269-276.

6 U.S. EPA, Atrazine Ecological Watershed Monitoring Data, http://www.epa.gov/pesticides/reregistration/atrazine/atrazine_update.htm#ewmp

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Concentrations shown represent maximum concentrations in each watershed.
Source: U.S. EPA, Ecological Watershed Monitoring Program.