

Atrazine Contamination in Indiana



Atrazine contamination is widespread in Indiana. 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 5% of EQIP funds for pest management in Indiana 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 Indiana’s drinking water and environment:

- ▶ Data obtained from public water systems by the Environmental Working Group (EWG) show that 1.3 million people in Indiana (28 percent of the population) were exposed to atrazine in their drinking water above state or federal health-based limits between 1998 and 2003.¹
- ▶ Ten of the twelve public water systems monitored in Indiana as part of a special drinking water supply monitoring program from 2003 to 2005 had average atrazine 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 conducted from 1996 to 1998 found average atrazine concentrations in the summer in the St. Joseph and Maumee Rivers of 5.5 and 10.1 ppb, respectively³ – both above the 1 ppb level that has been found in scientific studies to cause reproductive abnormalities in fish and amphibians.^{4, 5} The 10.1 ppb average in the Maumee River was above the EPA 10 ppb aquatic-community effect level.
- ▶ Eleven Indiana watersheds monitored through an Ecological Watershed Monitoring Program (2004-2006) ordered by EPA had average atrazine concentrations ranging from 0.71 ppb to 7.50 ppb, and maximum concentrations ranging from 8.6 ppb to a whopping 237.5 ppb. 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 eleven monitored Indiana 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
Brandywine Creek	2005-06	76	66 (87%)	16.4	9	3
Eel River	2004-05	73	73 (100%)	20.33	10	1
Eightmile Creek	2005-06	76	69 (91%)	16.9	12	2
Limberlost Creek	2004-06	113	105 (93%)	41.3	25	8
Little Pigeon Creek	2005-06	152	146 (96%)	237.5	40	18
Mill Creek	2004-05	73	54 (74%)	8.63	5	0
North Vermilion River	2005-06	140	114 (81%)	24.3	19	3
Raccoon Creek	2005-06	174	149 (86%)	34.49	37	13
Rock Creek	2004-06	71	59 (83%)	78.08	9	2
White River	2005-06	76	56 (74%)	22.55	7	3
Whitewater River, Noland’s Fork	2005-06	76	71 (93%)	21.11	7	3

* 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. EPA, Summary of 2003 – 2005 AMP Results, August 2006 http://www.epa.gov/oppsrrd1/reregistration/atrazine/amp_2003_2005_sum.pdf

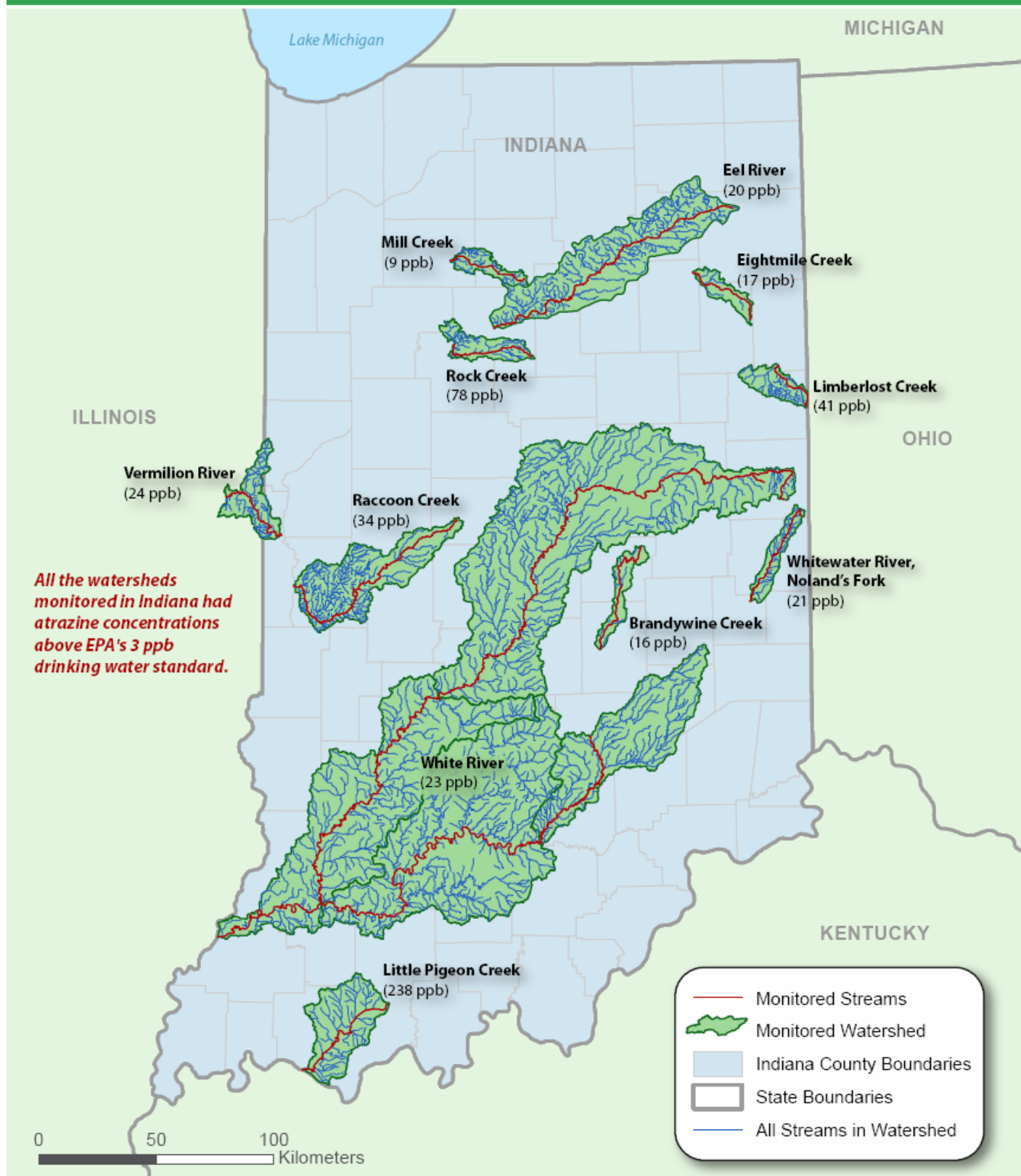
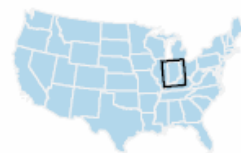
3 Myers, D.N., et al. 2000. Water Quality in the Lake Erie-Lake Saint Clair Drainages Michigan, Ohio, Indiana, New York, and Pennsylvania, 1996–98: U.S. Geological Survey Circular 1203, 35 p., <http://pubs.water.usgs.gov/circ1203/>

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

Atrazine Monitoring in Indiana



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