

Atrazine contamination in Iowa



Atrazine contamination is widespread in Iowa. 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 Iowa 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 Iowa’s drinking water and environment:

- ▶ Data obtained from public water systems by the Environmental Working Group (EWG) show that 234,200 people in Iowa (9 percent of the population) were exposed to atrazine in their drinking water above state or federal health-based limits between 1998 and 2003.¹
- ▶ Seven of the nine public water systems monitored in Iowa as part of a special drinking water supply monitoring program from 2003 through 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 found atrazine in all 343 surface water samples taken from four eastern Iowa watersheds from 1996 to 1998. Maximum concentrations were as high as 100 ppb,³ or 5 times the EPA 10 ppb aquatic-community effect level and 100 times the 1 ppb level that has been found in scientific studies to cause reproductive abnormalities in fish and amphibians.^{4, 5}
- ▶ Two Iowa watersheds monitored through an Ecological Watershed Monitoring Program (2004-2005) ordered by EPA had average atrazine concentrations ranging of 5.53 ppb and 10.0 ppb, respectively. 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 two monitored Iowa 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
Nishnabotna River	2004-05	101	83 (82%)	5.53	7	0
Wolf Creek	2004-05	121	114 (96%)	10.03	1	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. EPA, Summary of 2003 – 2005 AMP Results, August 2006, http://www.epa.gov/oppsrrd1/reregistration/atrazine/amp_2003_2005_sum.pdf

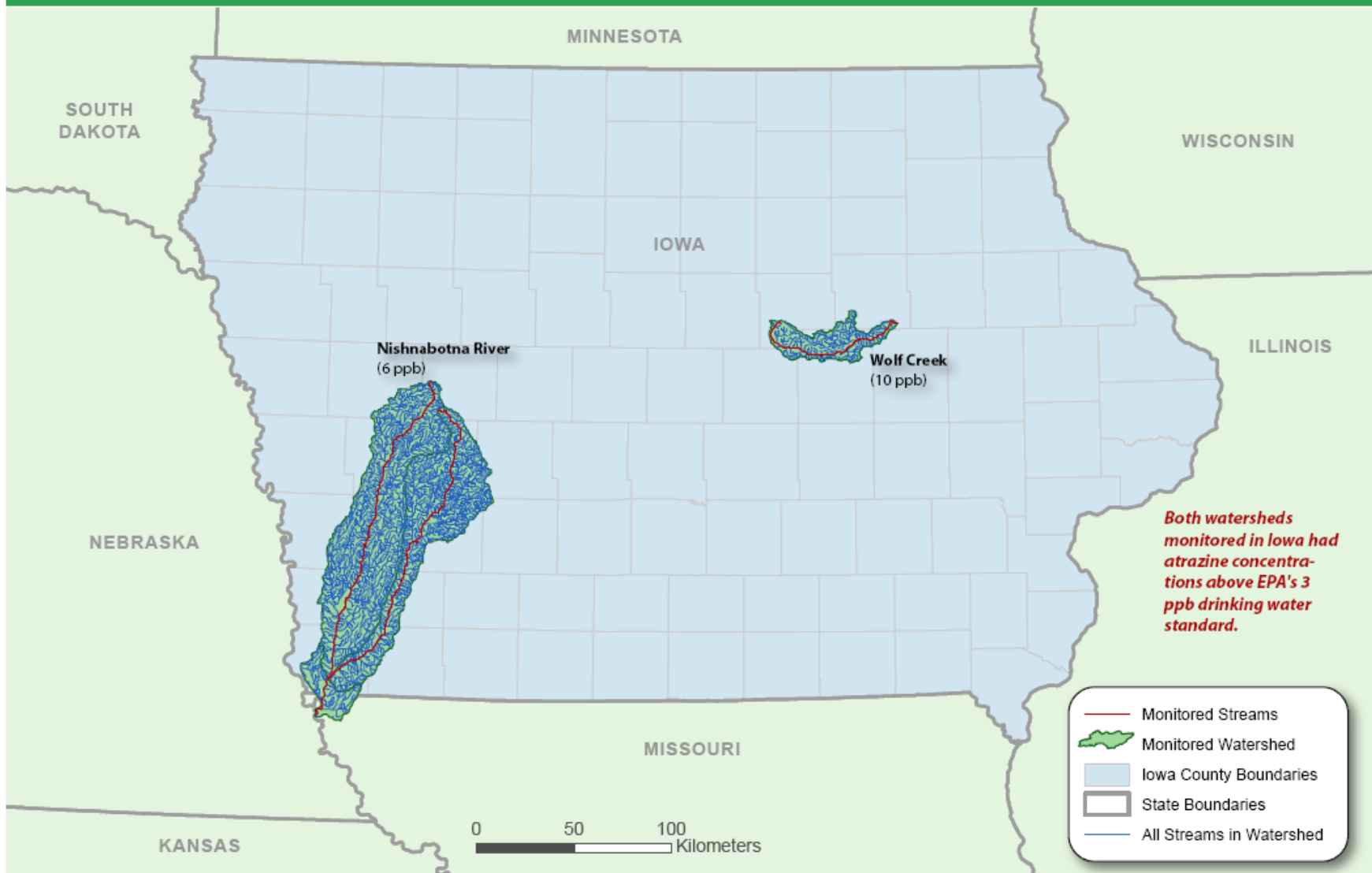
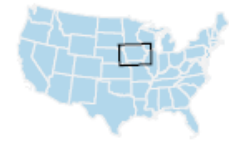
3 Kalkhoff, S.J., Barnes, K.K., Becher, K.D., Savoca, M.E., Schnoebelen, D.J., Sadorf, E.M., Porter, S.D., and Sullivan, D.J., 2000, Water Quality in the Eastern Iowa Basins, Iowa and Minnesota, 1996–98: U.S. Geological Survey Circular 1210, 37 p., <http://pubs.water.usgs.gov/circ1210/>

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.