

# Lindane in the Great Lakes



Michigan Network for  
**CHILDREN'S**  
**Environmental**  
**HEALTH**

Lindane is a pesticide used in certain pharmaceutical treatments for children's head lice and for scabies. The U.S. EPA classifies lindane as one of 22 "**Bioaccumulative Chemicals of Concern**" in the Great Lakes,<sup>1</sup> as a "priority pollutant" under the Clean Water Act,<sup>2</sup> and as an "**Extremely Hazardous Substance**."<sup>3</sup> Lindane is no longer used in the U.S. for agricultural, veterinary, or military purposes. Although the majority of lindane was used in agriculture, all forms of lindane are persistent, bioaccumulative, and toxic. Support HB 4402 to restrict pharmaceutical use of lindane!

## Lindane is Commonly Found in the Water of the Great Lakes

- **Lindane is present in Lake Huron, Erie, Superior and Ontario water**, according to a 2007 EPA and Environmental Canada "State of the Great Lakes" report.<sup>4</sup> **Lindane was "commonly found" in Lake Huron.**

## Lindane is in Michigan Sewage Systems

- The Detroit Wastewater and Sewerage Department found **detectable levels of lindane** in leachates prepared from solid residuals of wastewater during the sewage treatment process. Lindane was found in the grit, scum, and filter press cake from 2002 to 2004. Levels ranged from 0.01 to 0.89 ug/L (micrograms per liter or parts per billion) in the leachates.<sup>5</sup> **Lindane in the Detroit Wastewater system is likely the result of pharmaceutical uses of lindane.**

## Lindane is in Great Lakes Fish and Mussels

- "The most recent years of available analytical data in the U.S. EPA's Great Lakes Fish Monitoring Program indicate the concentration of **lindane in sport fish fillets** (Chinook and Coho Salmon and Steelhead Trout) have ranged between trace detection and 0.005 ppm between 1982 and 2000."<sup>6</sup>

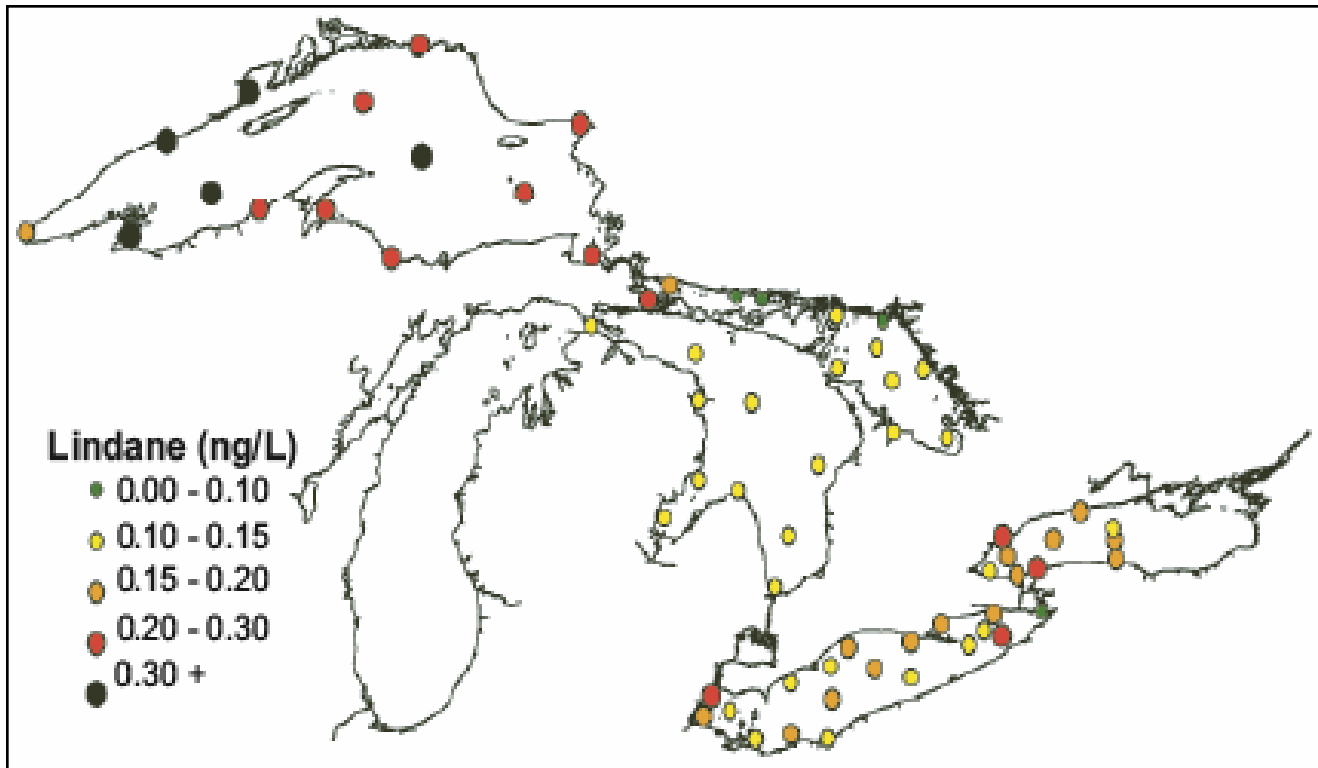
- The National Oceanic and Atmospheric Administration's National Status and Trends Program has found gamma-hexachlorocyclohexane (**lindane**) **in the tissues of mussels in the Great Lakes at "high concentrations"** in at least one site from 1992 until the latest data available (2005).<sup>7</sup>

## Lindane is Found in the Air in the Great Lakes Region

- "**Lindane** is being monitored **in air and precipitation** with the Integrated Atmospheric Deposition Network **in the Great Lakes region** with average concentration of 15-90 pg/m<sup>3</sup> in the early 90s, decreasing to 5-30 pg/m<sup>3</sup> since 2000."<sup>9</sup>

## Lindane is Present at Contaminated Sites in Michigan

- Lindane has been identified in 189 of the EPA's National Priorities List of hazardous waste sites (Superfund sites). At least twelve of these sites are located in Michigan.<sup>10</sup>
- The Michigan Department of Environmental Quality has **found lindane at three of its contaminated (Part 201) sites**:<sup>11</sup> Grand Blanc (Genesee County), Rhodes (Gladwin County), and Scottville (Mason County).



Lindane test results in the Great Lakes (State of the Great Lakes, 2007, p. 99)

*Emphases throughout document added  
by the Michigan Network for Children's  
Environmental Health*

## REFERENCES:

- 1 U.S. Environmental Protection Agency. Great Lakes Initiative, Bioaccumulative Chemicals of Concern Affected by the ban on Mixing Zones in the Great Lakes. Accessed 1-8-07 at: [www.epa.gov/waterscience/gli/mixingzones/chemicals.html](http://www.epa.gov/waterscience/gli/mixingzones/chemicals.html).
- 2 U.S. Environmental Protection Agency. Water Quality Criteria. Accessed 1-8-07 at [www.epa.gov/waterscience/criteria/wqcriteria.html](http://www.epa.gov/waterscience/criteria/wqcriteria.html).
- 3 U.S. Environmental Protection Agency. Alphabetical Order List of Extremely Hazardous Substances (Section 302 of EPCRA). Accessed 1-8-07 at [http://yosemite.epa.gov/oswer/ceppoehs.nsf/EHS\\_Profile?openform](http://yosemite.epa.gov/oswer/ceppoehs.nsf/EHS_Profile?openform).
- 4 State of the Great Lakes. Toxic Chemical Concentrations in Offshore Waters. 2007. Last accessed 5-19-08 at: [http://epa.gov/greatlakes/solec/sogl2007/0118\\_ToxicChemicals\\_OffshoreWaters.pdf](http://epa.gov/greatlakes/solec/sogl2007/0118_ToxicChemicals_OffshoreWaters.pdf). (p. 97, 99).
- 5 Detroit Wastewater and Sewage Department. Lindane Residuals (2000-2003) and TCLP Leachates (2000-2007). 2008.
- 6 United Nations Environment Programme, Persistent Organic Pollutants Review Committee. Risk Profile on Lindane. August 2006. Last accessed 5-19-08 at: [http://www.pops.int/documents/meetings/poprc\\_2/meeting\\_docs/en/K0652380%20POPRC-2-10.doc](http://www.pops.int/documents/meetings/poprc_2/meeting_docs/en/K0652380%20POPRC-2-10.doc). p. 15.
- 7 National Oceanic and Atmospheric Administration, Center for Coastal Monitoring and Assessment. Mussel Watch: Analyte Concentration Distribution. 1986-2005. Last accessed 5-19-08 at: [http://www8.nos.noaa.gov/cit/nsandt/download/mw\\_monitoring.aspx](http://www8.nos.noaa.gov/cit/nsandt/download/mw_monitoring.aspx).
- 8 UNEP, p. 15
- 9 Michigan Department of Environmental Quality. Part 201 Site List. May 2008. Last accessed 5-20-08 at: <http://www.deq.state.mi.us/part201ss/>.
- 10 U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry. Toxicological Profile for alpha-, beta-, gamma-, and delta-hexachlorocyclohexane. August 2005. Last accessed 5-19-08 at: <http://www.atsdr.cdc.gov/toxprofiles/tp43.html>. P. 183, 186.
- 11 Michigan Department of Environmental Quality. Part 201 Site List. May 2008. Last accessed 5-20-08 at: <http://www.deq.state.mi.us/part201ss/>. Site List. May 2008. Last accessed 5-20-08 at: <http://www.deq.state.mi.us/part201ss/>.



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The Michigan Network for Children's Environmental Health is a coalition of health professionals, health-affected groups, environmental organizations, and others dedicated to a safe and less toxic world for Michigan's children. Through education, outreach, and advocacy, we seek to protect Michigan's children from adverse impacts caused by exposure to widespread hazardous chemicals.

For more information, contact Gen Howe, MPH, Environmental Health Campaign Director, at 734-761-3186 ext. 115 or Mike Shriberg, Ph.D., Policy Director, at 734-761-3186 ext. 108.

