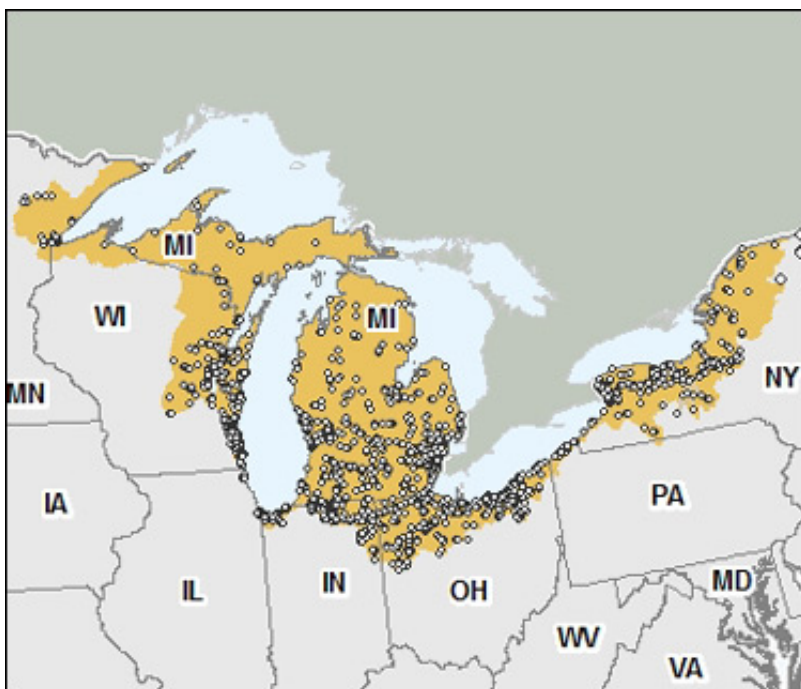




Toxics Release Inventory (TRI) Program

2011 TRI National Analysis: Large Aquatic Ecosystems - Great Lakes Basin



TRI facilities in Great Lakes Basin

Quick Facts for 2011

Number of TRI Facilities:	2,434
Total On-site and Off-site Disposal or Other Releases:	224.6 million lbs
Total On-site:	142.5 million lbs
• Air:	69.7 million lbs
• Water:	10.9 million lbs
• Land:	42.5 million lbs
• Underground Injection:	19.4 million lbs
Total Off-site:	82.2 million lbs

[View definitions of TRI terms](#)

The Great Lakes Basin consists of the Superior, Michigan, Huron, Erie, and Ontario Lakes, a number of other lesser lakes and waterways, and the surrounding watershed. The watershed covers parts of the U.S. states of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin, as well as parts of the province of Ontario in Canada. The Great Lakes are the largest freshwater bodies in the world, with a surface area of more than 94,000 square miles, and a watershed that covers 157,900 square miles in the United States. The Great Lakes system drains less than one percent of its total water volume each year to the Saint Lawrence River, which can result in high residence time for water and toxic chemicals entering the basin.

Major contributors to the ecological problems in the Great Lakes Basin include urban runoff, hazardous waste management, sewage disposal, and discharges of industrial wastewaters containing toxic chemicals. These environmental releases affect not only water quality but also aquatic food chains, fish populations, and human health.

The largest air releases of toxic chemicals in the Great Lakes Basin in 2011 were hydrochloric acid, mainly from electric utilities, and carbonyl sulfide, mainly from chemical manufacturers. Air releases decreased by 40% from 2003 to 2011, but increased by 1% from 2010 to 2011. The Great Lakes are very susceptible to resulting acid rain pollution due to the large surface areas in the water and watershed.

Nitrates and pesticides are common surface water pollutants from agricultural land and municipal wastewater treatment plants. Nitrates were also discharged in significant quantities by primary metals facilities (such as iron and steel mills and smelters) and food and beverage manufacturers in 2011. Surface water discharges in the Great Lakes Basin decreased by 6% from 2003 to 2011, but from 2010 to 2011 they increased by 12%.

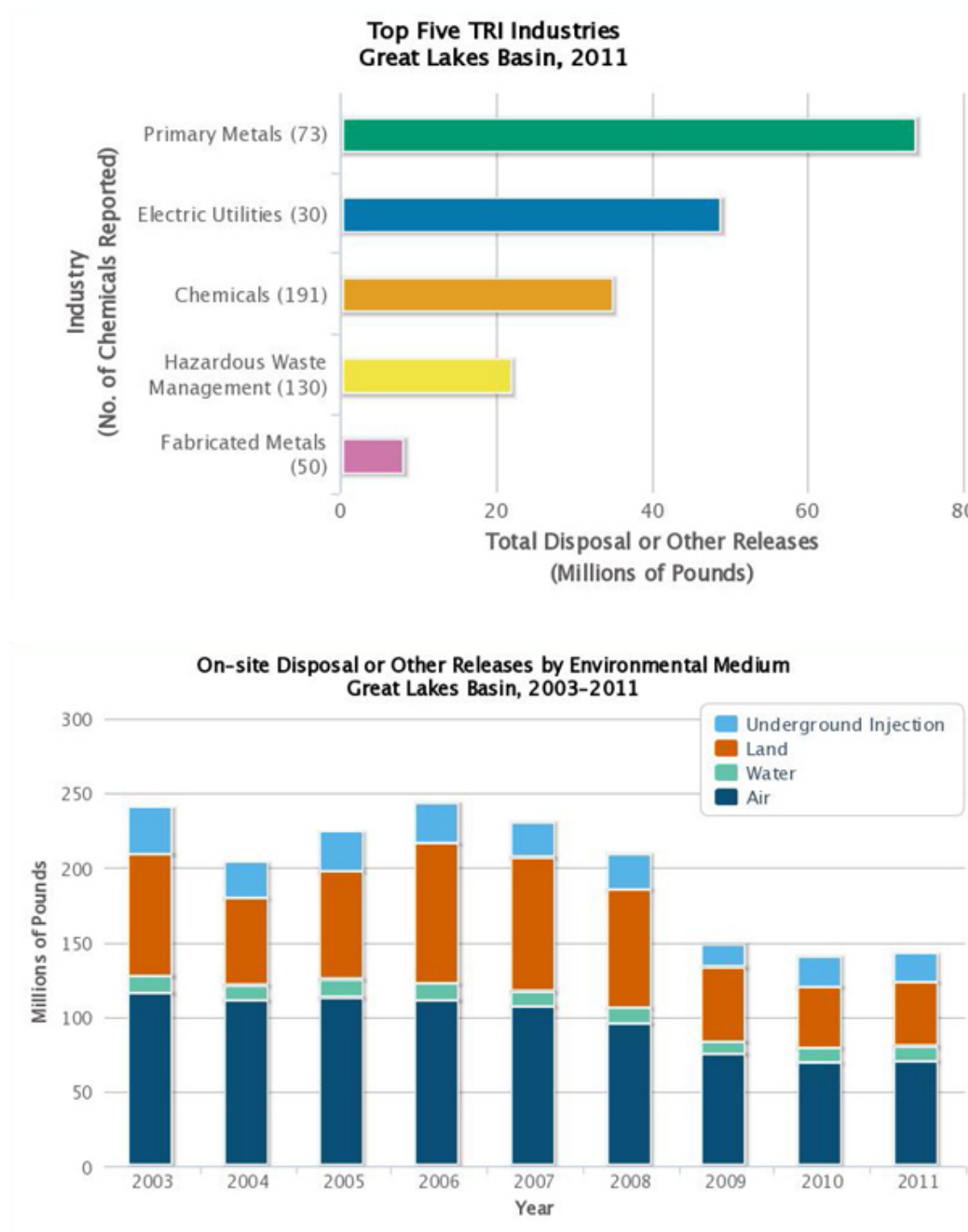
Electric utilities were the primary source of on-site land disposal of barium and its compounds in 2011. Primary metals facilities reported the largest amounts of zinc and manganese and their compounds in the basin. From 2003 to 2011, on-site land disposal or other releases decreased by 48%, but increased by 4% from 2010 to 2011.

In the Great Lakes Basin, there was on-site underground injection of TRI chemicals at hazardous waste management, chemical manufacturing and primary metals facilities during 2011. Hazardous waste management facilities were the primary source of nitric acid and hydrogen fluoride; chemical manufacturers reported acetonitrile, ammonia and methanol; and primary metals facilities reported ammonia. Underground injection decreased by 39% from 2003 to 2011 and by 5% from 2010 to 2011.

The health of the Great Lakes is much improved from previous decades due to voluntary and regulatory efforts at the local and international level, beginning with the first wide scale effort in 1972, the Great Lakes Water Quality Agreement, which coordinated water quality management efforts of the United States and Canada. Since that time, many toxic chemical disposals or other releases have been reduced or eliminated through regulatory and voluntary actions on both sides of the border;

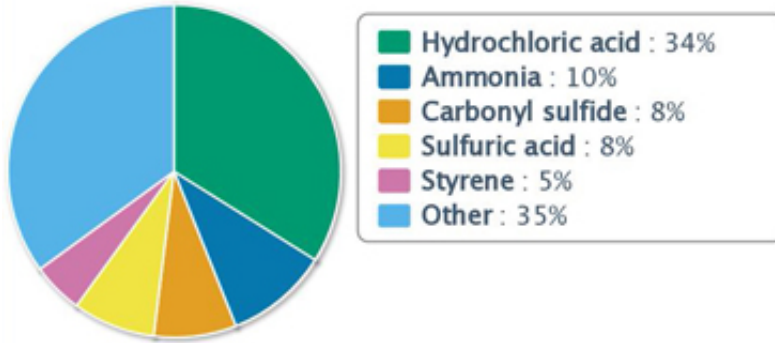
however, pollutants still enter the basin and the effects of many of the previously released toxic chemicals have not yet attenuated. To learn more about ongoing efforts to protect the Great Lakes, visit: www.epa.gov/ghlpo.

TRI National Analysis Geo-Specific Tables (Excel files)

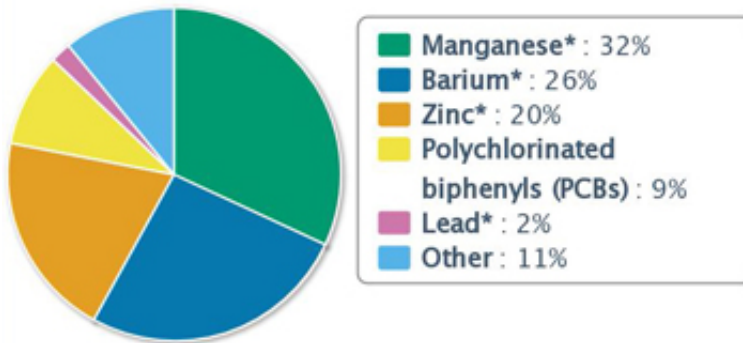


Top Five Chemicals by Environmental Medium Great Lakes Basin, 2011

Air
69.7 million pounds

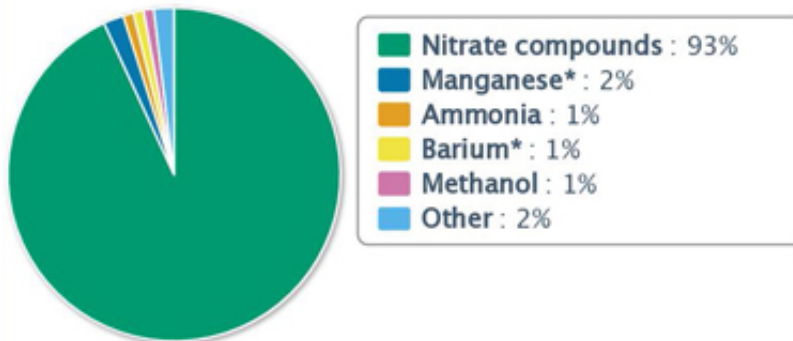


Land
42.5 million pounds



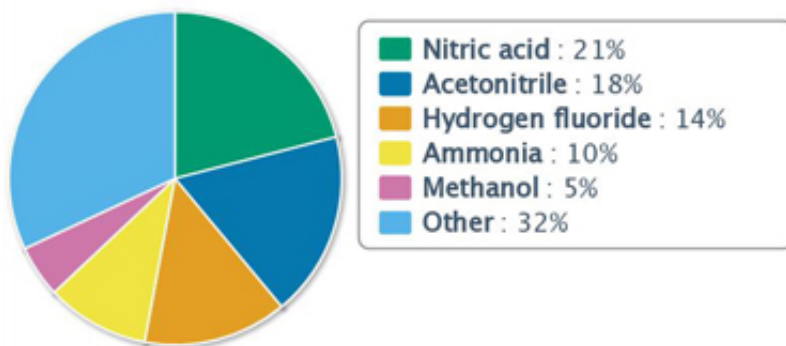
* and its compounds

Water
10.9 million pounds



* and its compounds

Underground Injection
19.4 million pounds



Note: This page was published in January of 2013 and uses the TRI National Analysis dataset made public in [TRI Explorer](#) in November 2012.

Last updated on March 16, 2014