WATER FACTS

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Great Lakes, High Stakes: Cleaning up Toxic Mercury Pollution in the Great Lakes Region

Mercury emitted into the air from coal-fired power plants is by far the leading man-made source of mercury in the Great Lakes and the rivers and streams of the region. Cutting mercury pollution will improve the health of people, fish, birds, and other wildlife. The U.S. Environmental Protection Agency (EPA) recently issued nationwide standards to limit airborne mercury emissions and other toxic air pollutants from coal-fired power plants by 2015. Power plants outside the Great Lakes also contribute to mercury pollution in the region. Currently Indiana, Ohio, and Pennsylvania have no limitations on mercury pollution from coal fired power plants. The technologies to meet the EPA's mercury limits are widely available and effective, but not all states require that pollution controls be installed. Our country needs sensible limits on all its coal-fired power plants to keep Americans safe from toxic mercury pollution.

POWER PLANTS ARE THE LARGEST SOURCE OF AIRBORNE MERCURY

In the eight states surrounding the five Great Lakes, there are more than 144 coal-fired power plants pumping more than 13,000 pounds of mercury into the air every year.[1] Approximately 20 percent of that airborne mercury pollution is deposited locally, into the soil, rivers, and lakes, where bacteria convert them to methylmercury, the most toxic form of mercury.

Although the health and environmental dangers of mercury to fish, wildlife, and humans are well known, there is an uneven playing field for power plant owners in the Great Lakes region because the three most polluting states (Indiana, Ohio, and Pennsylvania) have no mercury pollution control laws. This will change when the EPA's final and uniform pollution safeguards for the coal-fired power plant industry, known as Mercury and Air Toxics Standards (MATS), are implemented in 2015.

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MERCURY CONTROLS WILL BRING HEALTH BENEFITS

The EPA has projected that in 2016 alone the savings associated with the health benefits of its mercury and air toxics rule will total between $37 billion to $90 billion dollars, while the costs for implementing the new limits are estimated to be just $9.6 billion dollars. Human health benefits will include less bronchitis and asthma, fewer emergency room visits, and thousands fewer premature deaths.

Mercury can impact the central nervous system and harm the brain, heart, kidneys, lungs, and immune system. Young children and developing fetuses are most at risk. Subsistence fishers and Native American tribes whose cultural traditions involve high consumption of fish are also extremely likely to be exposed to high levels of methylmercury.

According to the EPA, residents of the eastern United States, which includes the Great Lakes region, will reap the majority of the health benefits of power plant pollution controls.

Health Benefits of the Environmental Protection Agency's New Standards for Coal-Burning Power Plants

4,200 to 11,000 fewer premature deaths
2,800 fewer cases of chronic bronchitis
4,700 fewer heart attacks
5,700 fewer hospital/emergency room trips
6,300 fewer cases of acute bronchitis
140,000 fewer cases of respiratory symptoms
540,000 fewer days of missed work
130,000 fewer cases of aggravated asthma

Source: EPA Final MATS Summary Fact Sheet

HALF OF ALL AIRBORNE MERCURY POLLUTION COMES FROM JUST 25 PLANTS

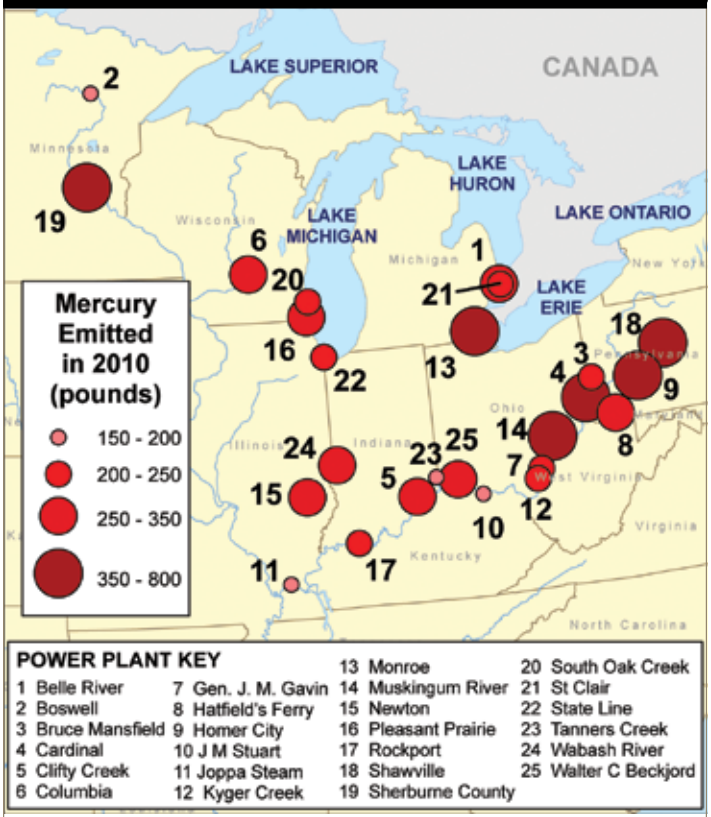
Over half of all mercury air pollution from the 144 coal-fired power plants in the Great Lakes States come from the 25 worst coal-fired power plants, which contributed almost 7,000 pounds of the toxin to the air in 2010.[2]

A significant fraction of mercury and other air toxics emitted by the worst plants in the region, as well as the rest, can be removed by air pollution controls already or soon to be installed at many power plants. Other technology that would achieve an overall reduction in mercury of 90 percent or more is readily available.

In 2010, the EPA estimated that nationwide air emissions of mercury from coal-fired power plants amounted to 58,000 pounds per year. Mercury is so highly toxic in very small amounts that the U.S. Food and Drug Administration has set a consumption limit for methylmercury at 1 part per million parts of seafood (1 ppm). Due to delays in adopting federal restrictions on mercury, some Great Lakes states have instituted statewide rules requiring coal-fired power plants to reduce mercury pollution, but in the three Great Lakes states with greatest mercury emissions from power plants (Ohia and Indiana) no mercury reduction rules have been adopted, or rules have been overturned by the state courts (Pennsylvania). Mercury pollution from power plants in the Great Lakes region account for close to 25 percent of the nation's mercury emission total.

In the eight states that surround the Great Lakes, more than 144 coal-fired power plants pumped more than 13,000 pounds of mercury into the air in 2010.

Coal-Fired Power Plants in the Great Lakes States



Plants listed in alphabetical order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MERCURY HURTS LOCAL ECONOMIES AND RECREATIONAL FISHERMEN

All of the Great Lakes and the majority of water bodies in the region are under fish consumption advisories, issued by state and provincial health agencies, due to mercury pollution. Mercury is the number one cause of fish consumption advisories in the region, and advisories have been increasing since 1993.

Fish consumption advisories hurt local economies because they result in a loss of recreational fishing revenue. In 2006, more than 11 million people, including 2.5 million children, fished in the Great Lakes, and in inland lakes and rivers in the region.

Anglers contribute to local economies with their fishing trips; in 2006, 1.4 million anglers spent $1.5 billion in the Great Lakes region on freshwater fishing.[3] The total economic impact of sport fishing in the Great Lakes states totals more than $20 billion, supporting approximately 190,000 jobs.[4] However, in virtually all of the Great Lakes states, the number of anglers has declined in recent years.

NEW REPORT SHOWS IMPORTANCE OF CONTROLS

A major new report, "Great Lakes Mercury Connections: The Extent and Effects of Mercury Pollution in the Great Lakes Region," issued by the Biodiversity Research Institute and the Great Lakes Commission, found that the extent and magnitude of mercury pollution in the Great Lakes area is significantly greater than previously reported.[5]

Six of the 15 commonly consumed fish species have mercury levels that exceeded the EPA's recommendations for human consumption in 61 percent of the commission's study region. After studying the work of 170 scientists, the commission said that further controls on atmospheric emissions of mercury would "lower mercury concentrations in the food web, yielding multiple benefits to fish, wildlife and people in the Great Lakes region."[6]

MERCURY HOT SPOTS PLAGUE THE GREAT LAKES REGION

Recent modeling from the EPA found mercury "hot spots," areas of the Great Lakes region that have elevated levels of mercury deposition due to coal-fired power plant emissions.[7] Mercury hot spots from coal-fired power plants have been found in Michigan, Ohio, and New York along Lake Erie, and areas around the southern half of Lake Michigan in Wisconsin and Illinois.[7]

The results of the EPA's modeling are in agreement with recent analyses of actual mercury monitoring data presented in the Great Lakes Commission Report.

New Proposed Nationwide Safeguards Will Drastically Reduce Mercury Pollution
(All emission figures are in pounds per year)

State	2010 Mercury Emissions from All Coal-Fired Power Plants	Percent of Total Power Plant Emissions in Great Lakes States	Emissions from Three Largest Plants in Each State in 2010	EPA's Projected Mercury Emissions From the Top-Three Power Plants in 2015 with the MATS in Pounds Per Year
Ohio	2,865	21	1,020	161*
Pennsylvania	2,720	20	1,558	177
Indiana	2,174	16	794	223
Michigan	1,924	14	1,125	166

* Duke Energy has announced that the Walter C. Beckjord Station will close in 2015. Thus, emissions for this plant and this state will be lower than projected by EPA under MATS.

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WILDLIFE HEALTH TO IMPROVE WITH MERCURY CONTROLS

Mercury safeguards that reduce contamination of fish will improve the health of wildlife that survives primarily on fish. Iconic waterfowl such as the common loon and the great snowy egret, as well as fish-eaters such as river otters and minks, are just a few of the species that are harmed by exposure to methylmercury and whose health will be improved if mercury pollution is reduced.

Scientists have identified health problems in wildlife including:

- Neurological impacts that may change foraging and mating behaviors
- Increased predation of eggs due to less time spent on nests/caring for young
- Adverse impacts on liver and kidneys
- Reduced survival rates
- Decreases in population viability[9]

SENSIBLE LIMITS ON MERCURY POLLUTION ARE NEEDED NATIONWIDE

The EPA's MATS are long overdue. Originally, they were to be adopted under the Clean Air Act in 2002. Since pollution controls for mercury are both readily available and cost-effective, and given the myriad public health and environmental benefits of reducing mercury emitted from the largest man-made source of airborne mercury pollution, there should be no further delay in implementing these rules.

Many power plants have already undertaken or are currently in the process of making upgrades to pollution controls that will lower mercury emissions. However, only a national rule will ensure that all coal-burning power plants reduce pollution to the same achievable levels. As the EPA has shown, the benefits of national mercury and toxic guidelines—to public health, the environment, and society as a whole—far outweigh the costs of control.

Endnotes

1 Based on U.S. Environmental Protection Agency's March 21, 2011 spreadsheet "Nationwide Emission Estimates," available at http://www.epa.gov/ttn/atw/utility/utilitypg.html.

2 Based on U.S. Environmental Protection Agency's 2011 Nationwide Emission Estimates (3/21/11) for the Air Toxics Standards for Utilities, Technical Support Documents, available online at http://www.epa.gov/ttn/atw/utility/utilitypg.html.

3 U.S. Fish & Wildlife Service, "2006 National Survey of Hunting, Fishing, and Wildlife-Associated Recreation," 10, available at: http://library.fws.gov/pubs/nat_survey2006_final.pdf.

4 Evers, D.C., et al., "Great Lakes Mercury Connections: The Extent and Effects of Mercury Pollution in the Great Lakes Region," Biodiversity Research Institute, 2011, 7.

5 Evers, D.C., et al., 30-31.

6 Evers, D.C., et al., at 4.

7 U.S. Environmental Protection Agency, Technical Support Document: National-Scale Mercury Risk Assessment Supporting the Appropriate and Necessary Finding for Coal- and Oil-Fired Electric Generating Units, December 2011, EPA-452/R-11-009, at 58 (Figure 2-3).

8 Ibid.

9 As discussed in U.S. Environmental Protection Agency, Regulatory Impact Analysis of the Proposed Toxics Rule: Final Report, March 2011.