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Mercury Emissions Linked to Mercury Pollution in Fish

DRYDEN, Ontario, Canada, September 18, 2007 (ENS) - Mercury atmospheric emissions will end up in fish in as little as three years, according to new research by a multidisciplinary team of about 50 researchers from the United States and Canada.

The study concludes that if mercury emissions from coal-fired power plants and other industrial activities were to be reduced immediately, the amount of mercury showing up in fish would begin to go down within a decade.

Called METAALICUS - Mercury Experiment to Assess Atmospheric Loading in Canada and the United States - the research involved government agencies and universities on both sides of the border.

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The study was conducted at the Experimental Lakes Area, near Dryden, Ontario, a freshwater research station with a long history of limnological research, including studies based on the manipulation of lakes.

Scientists from the Smithsonian Environmental Research Center's Microbial Ecology Lab participated in the study and explained how it was conducted..

The mercury load to the study ecosystem is being increased by a factor of about five over current local atmospheric ambient deposition, using highly-enriched stable mercury, Hg, isotopes, they said.

"Three separate isotopes are being used to dose the upland, wetland and lake," they explained. "This unique approach is allowing us to track the fate of newly deposited Hg separately from the larger existing pools, through time, and across various habitats."

The experiment filled a major gap in scientists' understanding of how mercury moves from the atmosphere through forests, soils, lakes and into the fish that people eat.

Its immediate value is that it provides undeniable proof of a direct link, said St. Louis. "We can say conclusively that if you reduce mercury emissions it will result in less mercury in fish."

He said the findings should spur policy-makers to enact regulations for more rapid reductions in mercury emissions by industry. The findings will appear in the "Proceedings of the National Academy of Sciences of the United States of America online edition next week.

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