



A Proposed National Mercury Monitoring Network - Summary -

The Need - Mercury is an environmental pollutant. As a potent neurotoxin, mercury is linked to adverse health impacts in humans, and in fish and wildlife. The single largest source of mercury pollution in the U.S. is atmospheric emissions and deposition associated with combustion from coal-fired power plants, electric arc furnaces, waste incinerators, and chlorine production plants. Mercury contamination is widespread in the U.S.; elevated concentrations are responsible for fish consumption advisories posted in 44 states. Eight percent of women of childbearing age in the U.S. eat sufficient amounts of fish for their fetuses to be at risk from methyl mercury exposure.

Despite the widespread nature of mercury pollution and its serious health risks, there is no comprehensive federal mercury monitoring network that measures mercury in air, soils, surface waters, fish, and wildlife. The existing Mercury Deposition Network is an important start, but includes only 89 sites that measure solely wet deposition.

On May 15, 2006, the U.S. EPA Office of the Inspector General cited the gap in U.S. mercury monitoring a new report which states, “Without field data from an improved monitoring network... ‘utility-attributable’ hotspots that pose health risks may occur and go undetected” and “We recommend that EPA develop and implement a mercury monitoring plan to (1) assess the impact of Clean Air Mercury Rule (CAMR) on mercury deposition and fish tissue; and (2) evaluate and refine mercury estimation tools and models”.

In January 2007, two scientific papers in the journal *BioScience* identified five confirmed and nine suspected biological mercury hotspots in the northeastern U.S. and southeastern Canada. The studies further link the biological mercury hotspots to atmospheric deposition of mercury and a case study in southern New Hampshire suggest that local coal-fired power plants are responsible for an area of very high deposition that is associated with a biological mercury hotspot in that region. The authors of these studies suggest that expanded mercury monitoring is needed to quantify mercury deposition patterns nationally, determine the impact on fish and wildlife, and document the environmental response to emission reduction policies.

The Approach - A comprehensive approach to mercury monitoring was recently detailed in the 2005 paper “Monitoring the Response to Changing Mercury Deposition”, published in the scientific journal *Environmental Science & Technology*. The proposal emerged from a U.S. Environmental Protection Agency workshop in Pensacola, Florida in 2003 that brought together 32 scientists from across the U.S. and some international scientists to devise a national mercury monitoring program.

This proposal calls for a national or continental scale program to measure and track changes in mercury and its effects across all ecosystem types. It also points to the need to monitor mercury in air, surface water, sediments, fish and wildlife in order to accurately assess the impacts of changing emissions. This full ecosystem approach is particularly important in light of the fact that the major pathway for mercury in people is the consumption of fish and wildlife. Each component of the monitoring network is described in detail in an upcoming book, “Ecosystem Responses to Mercury Contamination: Indicators of Change” published by the Society of Environmental Toxicology and Chemistry.

In addition, a group of 50 scientists participated in a series of meetings from May through October of 2006 to develop an improved system for monitoring total mercury deposition across the U.S. The “Mercury Deposition Network – Atmospheric Initiative” is calling for increased federal investment in national mercury deposition monitoring through the National Atmospheric Deposition Program in order to measure a baseline of total (dry and wet) deposition, analyze trends in total (dry and wet) deposition over time and geographically, evaluate and improve predictive-models and assess air quality regulations for mercury emissions. Fifteen locations have been identified for inclusion in this expanded network beginning in 2007 and 2008.

Federal Agency and Congressional Coordination - The Hubbard Brook Research Foundation and a team of scientists initiated contact with the following federal agency representatives and staff members in Congress to discuss a National Mercury Monitoring Network.

U.S. EPA - Ms. Tamara Saltman, 202-343-9621, saltman.tamara@epamail.epa.gov

U.S.G.S. - Dr. David Krabbenhoft, 608-821-3843, dpkrabbe@usgs.gov

NOAA - Dr. Mark Cohen, 301-713-0295 x 122, mark.cohen@noaa.gov

National Atmospheric Deposition Program – Dr. David Gay, 217-244-0462, dgay@sws.uiuc.edu

* Draft Bill sponsor: Rep. Tom Allen, D-Maine; James Bradley, Legislative Asst., 202-225-6116

Rep. Sherwood Boehlert, R-NY; Marty Spitzer, House Science Committee, 202-225-8844

Sen. Judd Gregg, R-NH; Chris Gahan, Legislative Counsel, 202-224-3324

Sen. Patrick Leahy, D-VT; Brian Baenig, Senior Legislative Assistant, 202-224-4242

Sen. Susan Collins, R-ME; David Hunter, Legislative Assistant, 202-224-3324