

THE NATIONAL MERCURY MONITORING NETWORK: REPORT FROM THE MAY 2008 WORKSHOP

Richard Artz¹, Mark Cohen¹, Jawed Hameedi², Tony Lowery³, Winston Luke¹

¹Air Resources Laboratory, National Oceanic and Atmospheric Administration

²Center for Coastal Monitoring and Assessment, National Oceanic and Atmospheric Administration, Silver Spring, Maryland 20910

³National Seafood Inspection Laboratory, National Oceanic and Atmospheric Administration

ABSTRACT

Ecosystem mercury contamination and related public health concerns regarding fish consumption have demonstrated the need for a national, integrated mercury monitoring and assessment network. Ecosystem contamination arises primarily from the atmospheric deposition of mercury compounds followed by incorporation into the food web. However, given the interplay of natural and anthropogenic sources of mercury and the metal's complex biogeochemistry, the effectiveness and environmental benefits of limiting mercury emissions from coal-fired power plants and other major sources are a matter of considerable scientific debate. Moreover, the lack of a uniform, nationwide mercury monitoring program in the United States remains a significant impediment to quantifying the temporal and spatial patterns of atmospheric mercury deposition and to evaluating the wide variety of computer models being used to simulate the emission, transport, fate, and ecosystem dynamics of this toxic metal. To this end, several federal agencies, along with representatives from state environmental agencies, tribes, the academic scientific community, and nongovernmental organizations, convened a National Mercury Monitoring Workshop in May 2008 to develop a strategy for implementing a national mercury monitoring network. The overarching goal is to establish an integrated network to systematically monitor, assess, and report on indicators of nationwide changes in atmospheric mercury concentrations and deposition, and concentrations of mercury species in land, water, and biota in coastal and freshwater ecosystems in response to changing mercury emissions over time.

This presentation summarizes the efforts to develop such a network on behalf of the workshop organizers, including a report from the May 2008 workshop. Specific goals of this workshop were to: (1) identify data sources of mercury concentrations in air, water, watershed, sediment, and biota, and develop protocols for data sharing and exchange; (2) distill recommendations from recent research publications, books and workshop proceedings to develop monitoring guidance on mercury indicators and ancillary parameters, and discuss potential network monitoring locations; and (3) identify mercury monitoring data gaps and consider options for filling those gaps.

KEYWORDS

Mercury, atmospheric emissions, deposition, monitoring network