

# Mercury Monitoring and Assessment Workshop

Sept 14-17, 2003

Organized by SETAC

Funded by  
EPA - Clean Air Market Division  
Electric Power Research Institute

# Why Have This Workshop?

- General environmental mercury levels remain elevated.
- Persistently high concentrations of air-borne mercury have the regulatory and regulated communities concerned.
- Effective decision making about changes in emissions requires an accurate means of documenting any gains or losses in environmental quality.
- The workshop goal addressed the requirement for good indicators of environmental quality.

# Our Goal

## **GENERALLY**

Find and describe the best way to document any gains or losses in environmental quality as mercury sources change due to regulatory actions.

## **SPECIFICALLY**

Provide expert judgment and insight about the desirable attributes of Hg monitoring or assessment programs, particularly the most appropriate environmental and ecological indicators for inclusion.

# Specific Focus Groups

**Best indicators for use for ...**

Group 1: Watersheds and Airsheds

Group 2: Waters and Sediments

Group 3: Aquatic Biota

Group 4: Terrestrial Wildlife

# Specific Group Tasks

**Identify indicators potentially applicable to the task**

**Produce objective criteria for judging their usefulness**

**Apply these criteria to determine the relative value of each indicator**

**Rank the indicators and select the best indicator or set of indicators**

**Identify any issues to be resolved in order to best implement the indicators**

# Group 1: Watersheds and Airsheds

Chair & Lead Author: Charles Driscoll

- Watersheds
  - Only some will be responsive, e.g., perched lakes
  - Sulfate deposition trends will confound mercury trends
  - Established criteria for selecting monitoring watersheds
- Airsheds
  - Extreme variation
  - Examine total ecosystem deposition
- Suggest monitoring of a few representative watersheds

# Group 2: Waters and Sediments

Chair & Lead Author: Dave Krabbenhoft

- The linkage between deposition and bioaccumulation
- Included methylmercury
- Developed criteria for indicators
  - Water - direct exposure to organisms
  - Sediment - smooth and integrate
- Sampling design
  - Stratify by waterbody type
  - Include MDN sites
  - Repeated sampling
  - Ancillary data essential
- Important to integrate with modeling needs

# Group 3: Aquatic Biota

Chair & Lead Author: Jim Wiener

- Central themes of human health & trophic exchange
- Defined criteria for selecting good indicators
- Discussed candidate indicators
  - Trophic exchange in aquatic systems
  - Potential human exposure (finfish emphasis)
- Qualities and framework of associated monitoring programs
- Ancillary data needs



# Group 4: Wildlife

Chair & Lead Author: Marti Wolfe

- Confirmed utility of wildlife as mercury biomonitors
- Emphasis on good indicators of spatial and temporal change
- Highlights methodological issues with case studies
- Discussed specific candidate
  - Mammals
  - Birds
  - Reptiles

# Outputs

## **BOOK**

Introductory Chapter by Mike Newman and Tamara Saltman  
(10 final pages)

Four Core Chapters (20 final pages each) coming from  
the individual groups.

Summary Chapter by Mike Murray, Rob Reash and Tamara  
Saltman (10 final pages)

© 100 page book published by SETAC Press.

Chapters available for review Nov 9

Reviews back by end of Dec, Revisions due by Feb

Book out in April or May 2004

## **FEATURE ARTICLE IN ES&T**

Short article with Rob Mason as lead author