**Atmospheric Deposition of Mercury and Trace Metals to the Pensacola Bay Watershed**

|  |
| --- |
| Assessment of Environmental Pollution and Community Health in Northwest Florida |
| EPA Cooperative Agreement X-97455002. July 1, 2002 to June 30, 2009 |
| Project Director: Dr. K. Ranga Rao |

*Task Leaders: Dr. Jane M. Caffrey and Dr. William M. Landing.*

Atmospheric deposition represents a significant source of nutrients and other contaminants in many watersheds. Contaminants come from both local emissions and emissions hundreds of kilometers away. Air quality in Pensacola Bay is affected by emissions from industrial sources, automobiles and other vehicles as well as other stationary area sources such as dry cleaners, gas stations, agriculture, and construction sites. Industrial sources include a coal fired electric generating plant, a paper mill, chemical and other manufacturing companies. The contribution of these emissions to atmospheric deposition in the Pensacola Bay watershed is unknown.

Our primary objective is to provide measurements of mercury, trace metals and major ions in rainfall over an annual cycle. We evaluate the temporal and spatial patterns in atmospheric deposition by comparing the results among 3 sites in the Pensacola Bay watershed and comparing them with data collected at MDN and NADP sites in the Southeast Region along the Gulf Coast.

The central question of interest is what is the atmospheric deposition of mercury and trace metals such as cadmium, chromium, lead, selenium, iron and aluminum to the lower Pensacola Bay Watershed? This study will address this general question as well as the following specific questions.  
1. Are there seasonal patterns in deposition rates?  
2. How do prior weather conditions affect deposition?  
3. Are there hot spots within the watershed?  
4. How does it compare within the region and how important are local sources of emissions?

Sample collection began in November 2004 and will continue until March 2007. Rain is collected at three locations in the watershed following rain events.