

Heavy Trace Metal Deposition Studied

Gary Larson, Regional Chief Scientist, and Robert Stottlemeyer, Department of Biological Sciences, Michigan Technological University (MTU), are co-investigators in a new study of heavy and trace metal deposition in the Great Lakes Basin. This research involves national park units in Ohio, Indiana, Michigan, Wisconsin, and Minnesota.

The best available EPA and state deposition data suggest that across these states there exists a pronounced west to east gradient of increasing atmospheric metal inputs. Chief objectives of the research are to continue monitoring of atmospheric inputs; determine metal input/output budgets in small gaged watersheds in each park unit; determine concentration levels in selected ecosystem biotic and abiotic components; and see if correlations exist between past and present atmospheric inputs, ecosystem retention, and organic decomposition rates.

This research is designed to complement a Basin-wide study initiated last year on small gaged watersheds located in these national parks. Increasing from west to east across the Great Lakes Basin is one of the most pronounced gradients of acid deposition in the United States. Historical data suggest this gradient has been in place for some time. This provides an opportunity to undertake time-trend analyses on the responses of watershed ecosystems to anthropogenic atmospheric inputs. Stottlemeyer is principal investigator for this study.

Spring 1984 also starts the third year of research on the long-term study of ecosystem responses to acidic precipitation on Isle Royale. This work is being carried out at the Boreal Research Station on Isle Royale and at MTU.

Objectives of this research are to look at long-term changes in critical plant mineral nutrient budgets and in selected biotic components which might indicate effects due to acid deposition. Three lake watershed ecosystems, representative of the diversity of perennial surface-flow systems in the Lake Superior Basin, are under study. They are thought to vary widely in their "sensitivity" (buffering capacity) to acidic deposition.

Isle Royale is one of four national parks involved in this research coordinated by Ray Herrmann of the Water Resources Field Support Laboratory in Ft. Collins, CO. The other national parks are Olympic, Rocky Mountain, and Sequoia.

This report was submitted by Stottlemeyer and Larson.