Changes in the Spatial Patterns of Surface-Water Chemistry Across the Northeastern U.S.: 1984-2001. (S11-warby122236-Oral)

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Abstract:

We conducted a comparative study of surface-water chemistry of 130 ponds across the Northeastern U.S. between 1984 and 2001. By comparing the 1984 and 2001 surface water chemistry data our study seeks to elucidate the spatial patterns of the recovery of these complex ecosystems from acidic deposition. The region was divided into five sub-regions. The data shows an overall increase in ANC of approximately 0.466 microeq L-1yr-1, with the most substantial increases occurring in the lower ANC range (<50 microeq L-1). On average the Adirondacks showed the slowest recovery in ANC (~0.05 microeq L-1yr-1) with Maine and Southern New England showing the greatest recovery ~0.86 and 0.75 microeq L-1yr-1, respectively. Sulfate decreased on average by 1.35 microeq L-1yr-1 across the region, ranging from (~-0.76 to -1.83 microeq L-1yr-1) in the Catskills and Poconos, and the Adirondacks respectively. Dissolved organic carbon (DOC) deceased across the region on average by 0.67 mg/L while pH increased by 0.11 pH units. This suggests that acid sensitive ecosystems in the Northeastern U.S. are recovering from acidic deposition but at a slower rate than originally suggested.

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