

# The effects of soil properties and vegetation on mercury accumulation in upland forest soils across the northeastern United States

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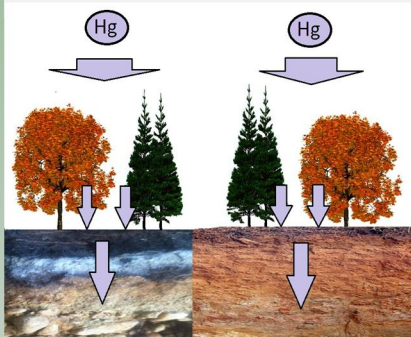
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## Introduction

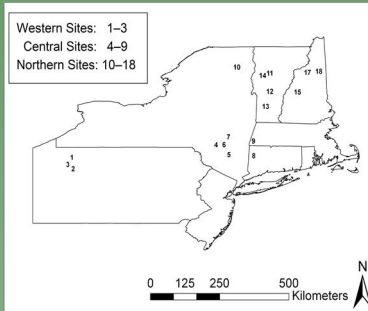
- Mercury (Hg) in upland forest soils is a large, potential source to downslope aquatic ecosystems.
- Characterizing the mechanisms responsible for the accumulation of Hg in upland forest soils is important for understanding the threat to humans and wildlife.
- Regional trends of other atmospherically deposited metals in forest soils have been dependent on deposition processes.
- It is unclear if localized ecosystem properties such as vegetation and soil type or regional deposition patterns are more influential on the accumulation of Hg in forest soils

## Objectives

- Determine if the accumulation of Hg is dependent on proximity to urban centers or other factors such as temperature regime or wet deposition
- Investigate if Hg concentrations and amounts are dependent on stand vegetation type
- Identify differences in the vertical distribution of Hg in two common soils orders.



## Study Sites

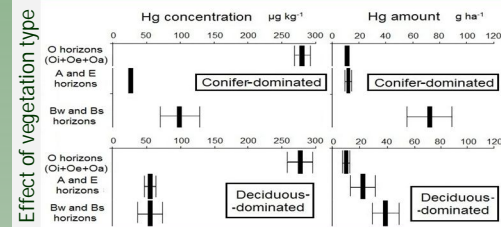
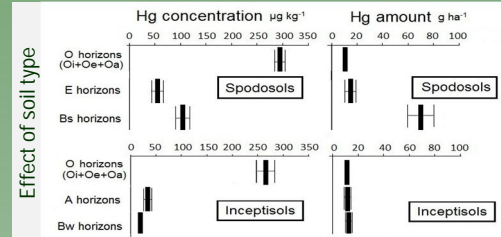
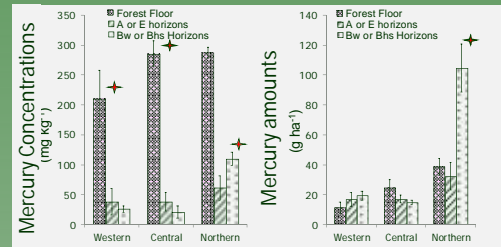


## Methods



- 5 replicate organic horizons, epipedons, and subsurface horizons samples were collected at each site.
- Physical and chemical analyses included: Particle Size Analysis, ICP-MS, LC for water-extractions, and X-Ray Diffraction of < 2µm fraction

## Results



## Conclusions

- The accumulation of Hg in the forest floor and mineral soil followed temperature regime and wet deposition patterns better than proximity to urban centers.
- Hg was significantly greater in Spodosols under coniferous vegetation, as these co-varied.

## Acknowledgements

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