# Uncertainty in streamwater fluxes of solutes at the Hubbard Brook Experimental Forest, New Hampshire





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# **Study Questions**

- What are the **sources of uncertainty** in estimates of streamflow and solute export?
- What is the **overall uncertainty** in stream fluxes?
- How do these **vary by solute**?
- Which sources contribute the **most uncertainty**?

# **Sources of uncertainty**

#### **Streamflow**

- Watershed area
- Rating curve
- Gaps in discharge

### Chemistry

- Chemical analysis
- Concentration-discharge
  relationship



Stage Height (m)



#### Concentration - Discharge Relationships

For the solutes in yellow, the relationship justified use of the composite method for interpolating concentration values between sampling dates.





# **Contributions to Flux Uncertainty**



Source

## Summary

- Total uncertainties in stream fluxes were mostly 5 - 10% and varied by year and by solute
- Concentrations were more uncertain than runoff, due to lab QC variability
- Uncertainty in SO4 < Si < Mg, K

More solutes forthcoming!

I THOUGHT I WAS INTERESTED IN UNCERTAINTY BUT NOW I'M NOT SO SURE



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