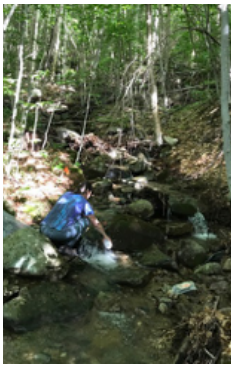
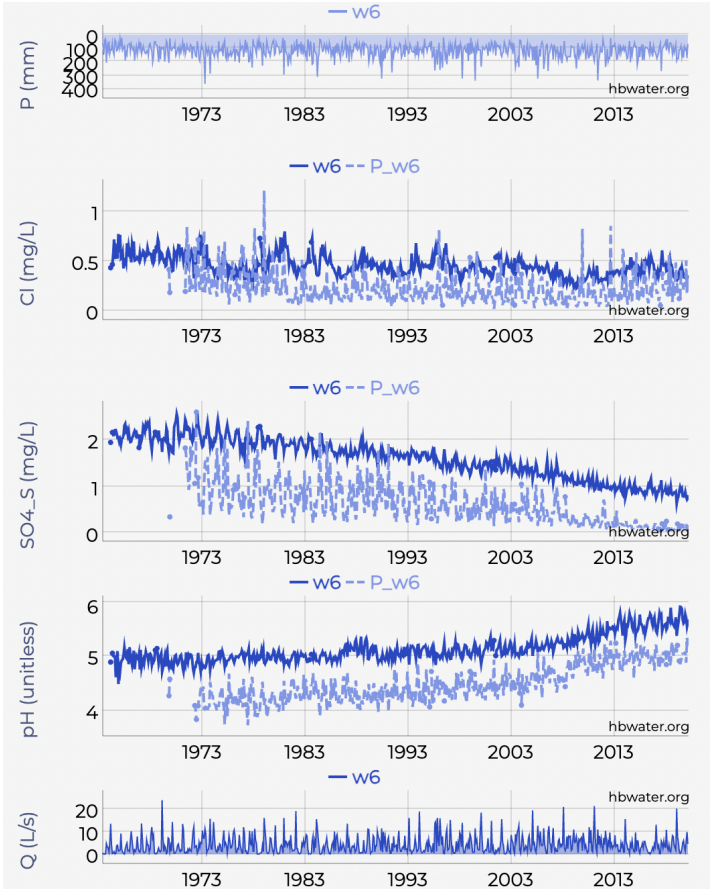
Hubbard Brook Watershed Report - 2021



What is HBWatER? The **H**ubbard **B**rook **Wat**ershed **E**cosystem **R**ecord is a dataset of chemical concentration data for precipitation and streamwater samples that have been collected weekly since the summer of 1963 from streams and precipitation gauges throughout the Hubbard Brook Experimental Forest, a research forest in the White Mountains of New Hampshire. HBWatER currently collects weekly samples from nine gauged watersheds, the mainstem of the Hubbard Brook into which each small stream drains, and three long-term precipitation collection sites.

A brief history: In 1963, 4 visionary scientists (Gene E. Likens, F. Herbert Bormann, Robert S. Pierce, and Noye M. Johnson) began collecting and analyzing stream water and precipitation (rain and snow) at a Forest Service property in the White Mountains of New Hampshire. They had a simple idea, that by comparing watershed inputs in rain and snow to watershed outputs from streams, they could measure the behavior of entire ecosystems in response to atmospheric pollution or forestry practices. The record they began in 1963 has been added to every week up to the present day. Insights gained from studying this long-term chemical record led to the discovery of acid rain in North America and documented the effectiveness of federal clean air legislation in reducing coal-fired power plant emissions **see the Figure on the right**. This long-term record has become one of the most iconic and influential environmental data sets, featured in hundreds of scientific and popular press articles.



These graphs show us: (1) the amount of weekly precipitation as rain or snow; (2) the concentration of sulfates in streamwater (navy) and precipitation (blue); (3) the pH of streamwater (navy) and precipitation (blue); and (4) the total streamflow every week since July 1963. Notice that precipitation and streamwater has become less acidic and lower in sulfates over time.

Explore the HBWatER at hbwater.org

The collection and analysis of HBWatER samples is currently sustained by Tammy Wooster (Cary IES) and Jeff Merriam (USFS) and the dataset is curated and maintained by a team of researchers: Emma Rosi and Chris Solomon (Cary IES), Emily Bernhardt (Duke), John Campbell (USFS), Bill McDowell (UNH), Charley Driscoll (Syracuse U.), Mark Green (Case Western), Scott Bailey (USFS). Current Financial Support for HBWatER is provided by NSF LTREB # 1907683 and the USDA Forest Service Northern Research Station.