Precipitation Chemistry Metadata
Cary Institute of Ecosystem Studies

We collect precipitation chemistry data using a Yankee Environmental Systems collector, which uses a sensor that causes a cover to open, revealing a clean bucket when precipitation occurs and closes when the precipitation ceases. The instrument collects all kinds of precipitation including snow and ice as well a rain. Samples are collected after every event and analyzed at the Cary Institute for pH and a suite of other constituents that are important for understanding acid deposition.

Data Codes:

- YEAR - Year during which event ended
- MONTH - Month during which event ended
- # OF EVENTS - Number of events during that month
- CM PRECIPITATION - Total volume of precipitation during that month (cm)
- CA - Calcium ion volume-weighted mean (mg/L) (DL 0.01 mg/L)
- CL - Chloride ion volume-weighted mean (mg/L) (DL 0.02 mg/L)
- K - Potassium ion volume-weighted mean (mg/L) (DL 0.01 mg/L)
- MG - Magnesium ion volume-weighted mean (mg/L) (DL 0.01 mg/L)
- NA - Sodium ion volume-weighted mean (mg/L) (DL 0.01 mg/L)
- NH4 - Ammonium ion volume-weighted mean (mg/L) (DL 0.02 mg/L)
- NO3 - Nitrate ion volume-weighted mean (mg/L) (DL 0.02 mg/L)
- PO4 - Phosphate ion volume-weighted mean (mg/L) (DL 0.002 mg/L)
- H - Hydrogen ion volume-weighted mean (mg/L)

Equipment:

- **Precipitation sample collection 1983-2008** Aerochem Metrics, Model 301, Automatic Sensing Wet/Dry Precipitation Collector, 2009-present Yankee Environmental model TPC-3000 Total Precipitation Collector
- **Precipitation volume 1983-June 2007** Belfort Instrument Co. Universal Recording Rain Gauge, Series 5-780, sensitivity +0.05 inch (1.3 mm), recommended significant figs. 2. Gauge was encircled by wind alter-shields. The tops of the alter-shields were level with the opening of the rain gauge. Precipitation amount from each event was checked using a standard plastic rain gauge and/or a snow depth / rain gauge. July 2007-present, Geonor Precipitation Gauge Model T-200B from co-located USCRN station.

Online Sources:

http://www.caryinstitute.org/science-program/research-projects/environmental-monitoring-program/precipitation-air-quality

http://www.caryarchive.org/emp_precipitation.html#variables