Lye Brook Wilderness CASTNET Site
Meteorological and Deposition Chemistry Monitoring
-1995 -

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Abstract:

Continuous monitoring of meteorology and wet and dry deposition chemistry has been conducted at the Vermont Forest Ecosystem Monitoring (VForEM) Lye Brook Wilderness site. The U.S. EPA, in cooperation with the Green Mountain National Forest and VForEM, established a CASTNET (Clean Air Status and Trends Network) site at the Lye Brook Wilderness research area (729m), in southwestern Vermont. The monitoring activities began January 1, 1994. The site is managed by Environmental Science and Engineering, Inc. (ESE, Inc.) in Durham, North Carolina, under contract from the EPA-CASTNET AREAL Laboratory. This project provides continuous, site specific air quality data on meteorology, dry deposition of SO2, HNO3, particle sulfate, nitrate, ammonium, wet deposition of major ions, and hourly average ozone concentrations. The site was established to research the effects of air pollution on the Air Quality Related Values (AQRV's) of this Class I Wilderness Area. Data from this project are available from the VForEM Data Manager.

Methods:

1. **Basic Meteorology** - The site includes a continuous meteorological monitoring station for ambient temperature at 2 and 10 m, and relative humidity, surface wetness, precipitation, wind speed and direction and solar radiation at 10 m. Meteorological data for 1995 are complete with the exception of November, when the site was off-line, so two years of data (1994-1995) are now archived.

2. **Precipitation Chemistry** - Precipitation is collected on a weekly basis using an AerochemMetrics wet-only collector. Samples are analyzed for major ions, acidity, pH and conductivity. The results of the analysis are comparable with other regional and national sites such as the NADP network.

3. **Dry Deposition** - Dry deposition monitoring at the site consists of continuous weekly sampling for SO_2, HNO_3 vapor, particulate sulfate, nitrate and ammonium. The results of this research are comparable with other regional and national sites, including the EPA National Dry Deposition Network and fourteen sites in the NOAA AIRMon (DDIM) program.

Significant Findings:

No analysis of trends has been completed at this time.