

## **A Creek in Need: A Water Chemistry Analysis of a Stream Slated for Restoration (Line Creek, Schoharie County, NY)**

Surface water quality may directly impact human health and the survival aquatic life. Schoharie County is a unique laboratory for studying surface water chemistry in that many creeks and streams were ravaged by large scale flooding events associated with Hurricane Irene and Tropical Storm Lee in 2011. Currently, one of the largest stream restoration projects in the US is being conducted in the Schoharie Creek watershed. One damaged stream is Line Creek, which is a small first order stream in that watershed, was tested for sodium, chloride, alkalinity ( $\text{HCO}_3^-$ ), hardness ( $\text{CaCO}_3$ ), iron, nitrite ( $\text{NO}_2\text{-N}$ ), nitrate ( $\text{NO}_3\text{-N}$ ), total and dissolved phosphorous ( $\text{PO}_4\text{-P}$ ), ammonia ( $\text{NH}_3\text{-N}$ ) and coliform bacteria. Aforementioned parameters were measured at two sites between February and May 2014 and compared to earlier data. Data for 2014 (upstream/downstream; all values are mg/L unless otherwise noted): sodium 3.18/4.46; chloride 13.5/22.5; alkalinity 29.2/55.0; hardness 40.8/58.8; iron 0.296/0.354; nitrite 0.011/0.014; nitrate 0.122/0.149; total phosphorous 0.002/0.043; dissolved phosphorous 0/0.015; ammonia 0.597/0.639; coliform bacteria(CFU) 16/42. While many parameters fell within EPA guidelines for human consumption or within an accepted range for survival of aquatic life, some like iron, were too high by EPA standards, while alkalinity was too low for aquatic life to properly develop essential hard/bony body structures. This work will be discussed with respect to the larger Schoharie Creek watershed. The broad implications of the data with respect to human and aquatic life will be discussed.

*Key Words: water quality, water chemistry, Schoharie County, Line Creek, stream restoration*