

New Hampshire Ecosystem Research Reaches Milestone!

Ecosystem research conducted by the Northeastern Research Station at Cone Pond Watershed, New Hampshire reached a milestone recently with the collection of the one-thousandth stream water sample (right). Cone Pond, in the White Mountain National Forest, is the subject of long-term studies of the movement of chemicals, both nutrient and toxic elements, through forest and aquatic ecosystems.



Studies were begun at Cone Pond in the early 1980's by Forest Service researcher Dr. James Hornbeck and cooperator Donald Buso, Institute of Ecosystem Studies. At that time, a unique opportunity was recognized to establish watershed scale research at an acidified pond and its adjoining forested catchment. The sensitivity of this watershed to changes in atmospheric chemistry and climate make it particularly valuable as an environmental bellwether.

In 1989, rain gauges and a stream weir were installed, allowing the measurement of inputs and outputs of water. Weekly sampling of precipitation and streamwater for chemical analyses was begun in 1989, and continues weekly, including the 1000th stream sample collected on February 1, 2005.

Research at Cone Pond has resulted in 63 scientific publications to date. Important results include studies of the mobilization of toxic aluminum in acidified forest soils and its retention in downstream aquatic environments, the long-term effects of forest fire on forest nitrogen cycling, and the effects of reduced calcium availability on the health of red spruce and sugar maple. The value of Cone Pond watershed as a regional research site is evidenced by its inclusion in grant funded research by university cooperators in regional studies of the effects of atmospheric sulfur deposition and the growth, chemistry, and longevity of tree roots on a regional calcium gradient. Proposed research includes a major National Science Foundation initiative on methylmercury production in aquatic environments.

A large part of the success of long-term ecological research at Cone Pond is due to the long-term commitment of the scientists and technicians who work there. In particular, Ralph Perron (right) has been maintaining the field instrumentation and collecting samples since 1990. Jane Hislop has overseen chemical analyses of water samples since the first sample was collected in the initial study in 1980.

