

Chautauqua Watershed Notes
From the Chautauqua Watershed Conservancy
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There Is More Going On In Winter Than Meets the Eye
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A forested canopy along Chautauqua Lake's shoreline enables more gradual snowmelt and lessens nutrient input.

This time of year when the days are short and often cloudy, I feel like curling up with a book in bed all day, waiting for spring's return. Although I remain active, my activities are more likely to be passive appreciation of the landscape: I'll be snowshoeing rather than gardening and photographing the frozen portions of the lake rather than kayaking them. It seems that with the lower light levels and dropping temperatures of fall, a silence descends and even the very landscape seems to shut down. Many people spend more time indoors, migrating birds have left for warmer regions, and plants become dormant. It would be easy to assume that not much is happening out there but that is definitely not the case.

As our portion of the planet started to angle further from the sun, leaves began to take a break from photosynthesis and the green pigments (chlorophyll) slowly became obscured by the carotenoids and anthocyanins, which give us the marvelous yellow, orange, magenta and red colors of fall. During this time, trees begin moving sugar to their roots in the form of starch. If, during any given autumn, there is a predominance of warm sunny days and cool evenings, an abundance of anthocyanins will be produced and the crimson colors of fall are amplified. Recent research has shown that this reduces risk of damage to leaf cells and enables efficiency of nutrient retrieval during senescence, which prepares the plant for next spring's leaf production.

Although some animals hibernate in winter, many forage throughout the coldest months in order to maintain body temperatures. Under the thick ice layer formed over the lake, our native coldwater fish remain vigorous. Snow is an important insulator for both plants and animals and is an important component of climate, landscape and land use. The insulating properties of a thick snow layer help young seedlings survive that first hardening winter and provide sheltered hollows for animals. Plants that have been recently transplanted and may not yet be winter hardy can be protected by the insulating value of snow through the coldest months of the winter. Snow that blankets the multiple layers of forests melts more slowly than on exposed landscapes, and snowmelt seeps gradually into uncompacted soils with abundant leaf litter rather than producing

rapid runoff that concentrates nutrients at abnormal levels in our streams and waterbodies. These exposed landscapes include fields, extensive lawns, parking lots and roads.

In late winter and early spring, starches stored in plant roots are converted to sap to feed and nourish new growth, and this pattern enables us to collect maple sap which is boiled down to make a nourishing and delicious syrup. Ideal conditions for collecting sap are when daytime temperatures are in the mid-40s and overnight temperatures are in the 20s resulting in a freeze and thaw cycle that creates pressure forcing the thawed sap upward. Some plants, like skunk cabbage, are able to make their own heat through a chemical reaction that allows the plant to produce flowers during winter and presumably attracts pollinators to their warmth and sustenance.

These subtle but essential winter activities sustain life through a quiet time of partial rest and prepare us for the upcoming riot of activity in spring. The rest I feel encompasses body, mind and spirit and allows me to greet spring with renewed enthusiasm for this fantastic world I inhabit.

The Chautauqua Watershed Conservancy is a private, not-for-profit, 501(c)(3) organization with a mission to preserve and enhance the water quality, scenic beauty and ecological health of the lakes, streams and watersheds of the Chautauqua region. Its urgent focus is to conserve the endangered natural shore lands of Chautauqua Lake, which provide fish and wildlife habitat and pollution filtering functions essential to a healthy lake. Only four miles (10%) of the lake's shoreline remains in a natural, undeveloped condition. The Conservancy is funded primarily through membership donations. Its 2008 annual membership campaign is currently underway. It is presently raising funds to conserve the Chautauqua Lake's most important remaining natural shoreline habitats, undertake programs to address the root causes of the conditions that fuel lake plant growth, and manage its preserves. It is the only local organization conserving lands in perpetuity for these purposes. Please contact the Conservancy at 664-2166 to join!