

Chautauqua Watershed Notes
From the Chautauqua Watershed Conservancy
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Land Use and Forest Trends Point to Declining Water Quality
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This forested area near Mayville helps deliver clean water to Chautauqua Lake. (CWC photo)

Approximately 8,000 residents depend upon Chautauqua Lake water for drinking and domestic use. Chautauqua Lake is a public drinking water source for Chautauqua Institution and the Town of Chautauqua Heights Water District and is also incidental drinking water to thousands of children and adults who play, swim or water ski in the lake each year.

Protecting the Source, a publication by the Trust for Public Land (TPL) and American Water Works Association (AWWA), states, “Watershed protection is the first and most fundamental step in a multiple-barrier approach to protecting drinking water. Healthy, functioning watersheds naturally filter pollutants and moderate water quantity by slowing surface runoff and increasing the infiltration of water into the soil. The result is less flooding and soil erosion, cleaner water downstream, and greater groundwater reserves.”

At the Chautauqua Lake Watershed Management Plan Advisory Committee’s April 22nd meeting, the consulting firm Bergman Associates presented preliminary information toward the completion of a Draft Characterization Report for this plan. This information will also be presented to the public at 6:00 p.m. on May 13th at Chautauqua Suites. Part of the report stated

that forest cover in the watershed decreased by 1.4% between 1992 and 2001 and that core forest areas had declined in size. Forest cover is one of the most important indicators of watershed health. Each tree in a watershed is a self-contained water filtration unit, performing the functions of absorbing the energy of raindrops with branches and foliage, holding the soil intact with its roots, and absorbing nutrients that otherwise could contribute to downstream lake aquatic plant and algae growth. A healthy forest floor is held together with a tangled matrix of tree, shrub and herbaceous plant roots. In small headwater streams, where this matrix is part of the stream bed, it is able to actually filter pollutants. The floor of an old forest is an uneven surface, with nooks, crannies, pits and mounds to trap water and allow it to seep into the ground. With this healthy forest topography, it takes heavy rainfall to overtop these pits and obstructions to create any significant runoff. In an ideal forest watershed system, precipitation is intercepted by foliage, leaf litter, and uneven ground, groundwater is recharged, and streams are fed with spring water throughout the year. So the more our watershed is covered with healthy forests, the cleaner the water is in the receiving water—the lake.

How does this pertain to Chautauqua Lake? Based on information presented to the Advisory Committee, forests cover only 56% of the Chautauqua Lake watershed—below the 70% or more optimal level. If we want to arrest future declines in lake conditions, we have a lot of conservation work to do! Although our area's population declined between 1971 and 1994, scattered residential and commercial development consumed twice as much land in the watershed. "Small development" is seen as a "very high threat" to Chautauqua Lake according to the Upper Allegheny River Basin Conservation Action Plan (The Nature Conservancy, 2008). Large blocks of forest are being cut up into ever smaller pieces due to residential and recreational construction and hobby farms. Very visible recent ongoing conversions of forest to residential development can be seen along many roads in the watershed. The loss of forest filtration functions is compounded by the excessive runoff from rooftops, paved surfaces and compacted residential lawns, which all contribute to flooding, excessive stream erosion and sedimentation in the lake creating fertile conditions for excessive plant growth. The implications are not good for future conditions in Chautauqua Lake. However, landowners, organizations, community leaders and government can work together to invest in, design, and implement effective land conservation, zoning and reforestation efforts to conserve and restore substantial acreages of healthy forests. Otherwise, we can expect lake conditions to decline over coming decades.

For additional information:

Conserving Forests to Protect Water:

http://www.tpl.org/content_documents/landandwater_opflow_article.pdf

Protecting the Source, Trust for Public Land:

http://www.tpl.org/content_documents/protecting_the_source_04.pdf

Working Trees for Water Quality:

<http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1012&context=workingtrees>

The Chautauqua Watershed Conservancy will be holding its Spring Wildflower Tour, featuring JCC botanist Becky Nystrom, at 2:30 PM, Sunday, May 17th in the Spann woods at the mouth of Chautauqua Creek, on Route 5, ¼-mile west of Route 394. The CWC is a local 501(c)(3) not-for-profit supported primarily by membership donations whose mission is to preserve and enhance the water quality, scenic beauty and ecological health of the lakes, streams and

watersheds of the Chautauqua region. To register for the tour, obtain more information or support these efforts, call 716-664-2166.