



Chautauqua Current No. 12

Chautauqua Lake & Watershed Management Alliance, Inc.

August 29, 2022



Figure 1. More Ball Creek project information can be found on the Alliance website at www.chautauquaalliance.org/projects/ball-creek/.

On The Ball

The Power of Streamwork

By Jay Young

Chautauqua Lake & Watershed Management Alliance

The cool waters of Ball Creek meander their way across the Town of North Harmony, under the pylons of the I-86 bridge, and exit into Chautauqua Lake near the northern edge of Hadley Bay. Its headwaters stretch back to a large wetland near Cheney Road, and its reaches provide beautiful habitat for birds, turtles, beavers, insects, amphibians, and fish. In the last several years many important projects have been developed in order to help protect this great resource and improve the quality of water that it delivers to the lake. The cooperation between different stakeholders and funding sources that have come together on Ball Creek are a great example of how we can approach stream restoration over the short and long term.

In total, the stream drains around six percent of all the land that feeds the lake. All of the creeks that make up the watershed, including Ball, bring sediment and nutrients along for the ride. Water and gravity make a strong team, and during the natural lifespan of streams we expect to see things like bank and channel erosion, debris issues, and channel bends. These are all normal parts of being a stream, however they can contribute to conditions that we don't prefer as people who live on and use the lake.

Excessive sediment and nutrient transfer from streams helps to fuel nuisance plant and algae growth and can cause a shallowing effect in the long term as more dirt makes its way to the lake. There are also the immediate impacts of erosion, like unstable banks and loss of land.

Because of these concerns, stream restoration is a commonly used best management practice to reduce erosion, improve stability, and benefit water quality. Engineers design different solutions to address these issues, and adapt their plans to work with rather than against the natural features of each particular site. Starting in 2017 a 250-foot section of Ball Creek's streambank located on the Chautauqua Watershed Conservancy's property was armored with heavy stone and regraded. Native trees and plants like willow live stakes were also planted to improve water quality and stabilize the area. A grade control structure, which is a cross-channel feature that generally consists of rock and/or logs, was also used to reduce water velocities and stabilize slope. This work was funded through a New York State Department of Environmental Conservation Water Quality Improvement Project grant (a common source for local watershed projects) awarded to Chautauqua County. By protecting banks with stone or other barriers, and planting on the shoreline, we can slow down and filter water and lessen erosion, which all helps to improve water quality in the lake.

A big part of working in the watershed is getting different funding sources to line up. Building off the work that began in 2017, North Harmony was awarded a 2021 grant through the Alliance's Consolidated Local Funding Program to stabilize another section of streambank. This local investment was then used to leverage even more money from the state through another WQIP grant, which was awarded to the town in late-2021 to stabilize another section of Ball. When completed, these two projects will help to stabilize around 440 feet of bank, which improves around 2,100 feet of stream corridor. If you take a drive near the Ashville Fire Station on Stow Road, you can see a part of this latest project, which is currently being completed. In addition to all of the water quality benefits this stabilization provides, the work will also protect the road.

Stabilization and related restoration is recommended by a range of different guidance documents that stakeholders use to prioritize and implement projects. The NYSDEC Harmful Algal Bloom Action Plan for Chautauqua Lake outlines the strategies that we employ to reduce HABs. Stream improvement is a Priority 1 project in this plan, and complements other work in the watershed like public sewer extension (currently underway), stormwater management, and green infrastructure.

When we look at an area like Ball Creek that has undergone a lot of work, maintenance is an important idea to keep in mind. The maintenance that you do for your car or your house is not a single task, it is constant upkeep to make sure things are running smoothly in the long term. Watershed maintenance works the same way. We are talking about miles and miles of streambanks across thousands of acres of land, all of which are churning away 24/7. This type of work is but one part of the larger picture of everything being done to help our waterways. Watershed work, in-lake maintenance, and research each play important but different roles as we head towards our objective of a healthier and better-understood lake.

The Alliance thanks all project partners and funders including: the Town of North Harmony, Chautauqua County, EcoStrategies Engineering and Surveying, Rock of WNY, CWC, Chautauqua County Soil and Water Conservation District, Chautauqua Region Community Foundation, the Ralph C. Sheldon Foundation, The Lenna Foundation, the Holmberg Foundation, and the Environmental Protection Fund administered by NYSDEC.