Conesus Lake and Watershed 2013 Report Card

Assessment of the

Conesus Lake Watershed Management Plan

Conesus Lake Watershed Council

May 30, 2014

EcoLogic

PURPOSE OF THIS DOCUMENT

One of the recommendations of the Conesus Lake Watershed Management Plan (CLWMP) is to prepare an annual update summarizing the status of activities in the watershed, particularly the ongoing efforts to reduce nonpoint source pollution. This annual summary also provides a forum for tracking conditions in Conesus Lake and highlighting new information.

MAJOR ACCOMPLISHMENTS

Since its formation in 2003, the Conesus Lake Watershed Council (CLWC) has coordinated implementation of the recommendations of the CLWMP. The Watershed Council is an intermunicipal organization with a dual mission: first, to coordinate actions for restoring the health of Conesus Lake and its watershed, and second, to communicate progress to the watershed community and other stakeholders. Restoring the health of the lake and its watershed requires a sustained effort and a focus on many interrelated issues. Progress toward implementation of the CLWMP recommendations continued in 2013. Highlights include:

- ***The Conesus Lake Watershed Characterization Report*** A ten-year update was approved by the CLWC in May 2013. The report incorporates the data and information garnered over the past decade, assesses the changes observed over time, and provides recommendations for the future.

- ***Conesus Lake Watershed Council—Invasive Species Prevention and Response Plan*** This response plan, approved by the CLWC in May 2013, was developed to serve as a reference for problem solving and decision making throughout the invasive species management process. This plan will help the community meet the objective and goals outlined in the CLWMP.

- ***Conesus Lake Boat Launch Invasive Species Prevention Feasibility Study*** This feasibility study reported on the costs and benefits of several approaches to preventing invasive species from entering or leaving Conesus Lake in association with watercraft using the public boat launch.

- ***Studies of Adult and Larval Zebra Mussel Populations in Conesus Lake, NY (Summer 2013)*** The goal of this study was to assess the status of the dreissenid (zebra and quagga) mussel populations in Conesus Lake. Both adult and larval life stages were surveyed by biologists from SUNY Geneseo.

- ***Long Point Park Rain Garden*** The Town of Geneseo, Livingston County Planning Department, and Livingston County Soil & Water Conservation District completed a rain garden installation and planting at Long Point Park on June 10, 2013; the garden was featured at a subsequent Green Infrastructure Workshop.

- ***Watercraft Stewardship Program*** Supported by grants from the Great Lakes Restoration Initiative and the Finger Lakes Institute, and augmented by substantial local contributions from CLWC and CLA, two full-time stewards inspected over 5,000 boats for invasive species at the NY-SOPRHP public launch on East Lake Rd.

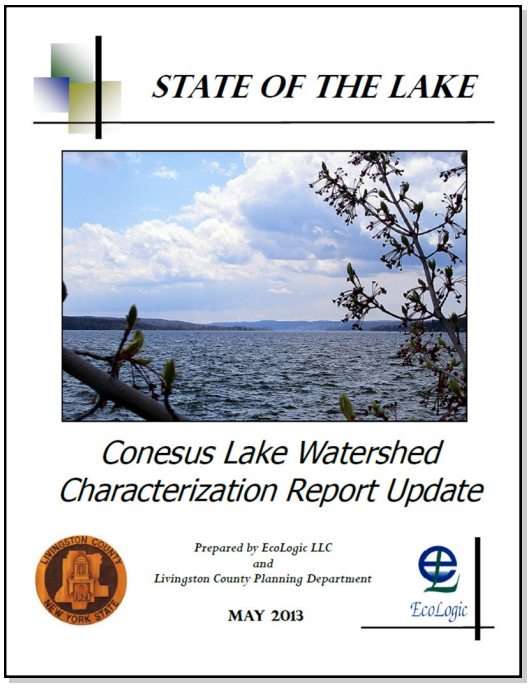
Long Point Park Rain Garden.
Image courtesy Livingston County Planning Depart-

TEN-YEAR UPDATE OF THE CONESUS LAKE WATERSHED CHARACTERIZATION REPORT

In May 2002, the *State of Conesus Lake: Watershed Characterization Report* was completed; the report documented current water quality and ecological conditions of Conesus Lake and its watershed. Specific areas of concern were identified, including sedimentation, nutrient enrichment, bacterial contamination and pesticide levels that threaten the long-term health of the lake and its uses as a drinking water supply and recreational resource. Based on the findings of the *Characterization Report*, the 2003 *Conesus Lake Watershed Management Plan* (CLWMP) was developed, which laid out a series of recommendations addressing the specific areas of concern.

Guided by the CLWMP's recommendations, local, state and federal partners have made a substantial investment in the watershed. More than six million dollars from federal, state and local sources have been directed toward efforts to restore and protect Conesus Lake and its watershed, monitor the effectiveness of these efforts, and communicate the findings to the public. This total does not include the countless hours of time expended by dedicated community leaders, public agency representatives, and municipal employees and volunteers.

In 2012, the Conesus Lake Watershed Council (CLWC) approved the undertaking of a ten-year update to the *Watershed Characterization Report*. This update incorporated the data garnered from 2003 through 2012. Sources of these data included the annual monitoring program administered by Livingston County Planning Department and funded by the State through the Finger Lakes-Lake Ontario Watershed Protection Alliance (FLLOWPA), as well as the findings of the USDA-funded research program led by Dr. Joe Makarewicz of SUNY Brockport.



Approved by the CLWC in May 2013, the *State of the Lake: Conesus Lake Watershed Characterization Report Update* describes the many projects and activities that have been implemented to mitigate the inflow of pollutants, such as nutrients and sediment, from the landscape to the lake and evaluates the impact of these projects. More broadly, the effectiveness of the *Management Plan* is examined in terms of collaboration among the project partners, reduction in pollutant inflows, and changes in the lake's water quality and aquatic habitat

Collaboration is Key

One major success to report is the collaborative approach to lake and watershed management. Among the recommendations of the CLWMP was creation of the CLWC; this organization was formed 2003 to oversee implementation of the Plan's priority actions. The CLWC was created by an Intermunicipal Agreement among Livingston County, the watershed municipalities and the water purveyors. The Conesus Lake Association is an active participant in Council meetings and plays a key role in keeping the lake community engaged with local government.

TEN-YEAR UPDATE OF THE CONESUS LAKE WATERSHED CHARACTERIZATION REPORT (CONTINUED)

The success of this institutional framework for lake and watershed management was celebrated in 2011, when the Conesus Lake Watershed Council received the Planning Excellence Award from the New York Upstate Chapter of the American Planning Association (APA) for Planning Excellence in Implementation.

The activities of the CLWC reflect the principles of adaptive management; as recommendations of the CLWMP are implemented, there is a parallel commitment to monitoring the lake and watershed to track improvements. One reason this "build and measure" approach is so effective in the Conesus Lake watershed is the successful long-term partnership between Livingston County and the State University of New York (SUNY) aquatic sciences programs at Brockport and Geneseo. Professors Joe Makarewicz and Sid Bosch have guided the design and implementation of the monitoring program and mentored students as they learn how human activities affect the ecosystem.

What is the State of the Lake in 2013?

Over the past decade, almost two million dollars of federal, state and local funds have been directed toward agricultural best management practices (BMPs) within the watershed. Municipalities have taken steps to control erosion as a result of increasing residential development. Stabilization of road ditches and streambanks further prevented tons of sediment and nutrients from reaching Conesus Lake each year. The concerted efforts to implement agricultural BMPs, control stormwater runoff, and improve the stormwater collection infrastructure have reduced the watershed input of nutrients and sediment.

Before (top) and after (bottom) photos of a ditch adjacent to East Lake Road in the town of Livonia.
Images courtesy Livingston County Planning Department.

The Lake's trophic state appears to have stabilized. This positive development is likely the result of the suite of BMPs implemented across the watershed. The Conesus Lake food web appears to have remained stable over the past decade, as indicated by the plankton and fish communities. The federally-funded watershed management project demonstrated the benefits of agricultural management on stream water quality and reduced plant abundance in nearshore areas. Lakewide, the macrophyte community appears to be trending toward improvement, with a diminished importance of Eurasian watermilfoil.

Over the last decade, many types of educational materials, including pamphlets, reports, articles, and kiosks have been developed to keep the community engaged with efforts to improve the quality of Conesus Lake. The Conesus Lake Association has staffed booths at numerous events including NYSDEC National Hunting and Fishing Day, CLA Youth Days, and the CLA Arts and Crafts Festival. The Conesus Stewardship Initiative is a direct effort to engage all watershed residents with the health of the lake through encouraging watershed residents to engage in lake-friendly activities at home.

TEN-YEAR UPDATE OF THE CONESUS LAKE WATERSHED CHARACTERIZATION REPORT (CONTINUED)

What are the recommendations of the ten-year update?

- Update the Conesus Lake Watershed Management Plan

  This 2013 update to the Watershed Characterization Report provides a foundation for updating the Conesus Lake Watershed Management Plan (CLWMP). An updated CLWMP can provide the foundation for reviewing what has been done, identify what other actions might be done to address on-going, potentially serious, issues, and incorporate the new findings and evolving partnerships focused on these issues.

- Continue the existing institutional framework for managing the lake and its watershed

  The Conesus Lake Watershed Council is an award-winning partnership that has proven to be an effective institutional framework for watershed management over the past decade.

- Continue to advocate for support of FLLOWPA and other watershed management funding programs in the New York State budget

  The monitoring of the lake and watershed that form the basis of this update to the Characterization Report were funded in large part by federal and state sources. The value of a science-based approach to managing our lakes and watersheds cannot be overstated. The Conesus Lake community should continue to advocate for resources to implement BMPs, monitor their effectiveness, and report the findings to the community.

- Continue to support the position of Conesus Lake Watershed Manager and the Conesus Lake Watershed Inspection Program

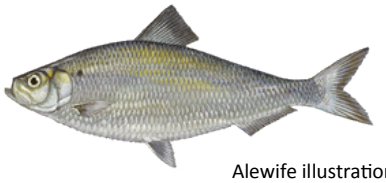
  By its very nature, watershed management involves a myriad of tasks, issues, and interest groups. The positions of Watershed Manager and Conesus Lake Watershed Inspector have contributed to the success of the program.

- Celebrate the success of the last decade and share the message!

2013 FOCUS ON THE CONESUS LAKE WATERSHED COUNCIL INVASIVE SPECIES PREVENTION AND RESPONSE PLAN

Invasive species, by definition, are non-native, introduced species that cause harm to the environment, human health, and/or the economy. Populations of invasive species often expand relatively unchecked and disrupt the native ecosystem until the environment begins to evolve and adapt on its own.

Conesus Lake is currently home to six confirmed aquatic invasive species. Of these six species, three (Eurasian watermilfoil, alewife, and zebra mussel) account for the most prominent and ecologically significant impacts on Conesus Lake. The Conesus Lake Watershed is also home to many terrestrial and wetland invasive species.



Alewife illustration
Credit: Duane Raver/USFWS

Invasive aquatic species in Conesus Lake.

On May 10, 2013, the Conesus Lake Watershed Council (CLWC) approved an Invasive Species Prevention and Response Plan for Conesus Lake. This Plan will facilitate effective and efficient collaboration between organizations and agencies to prevent new invasive species infestations and minimize the ecological, economical and recreational impacts of existing invasive species in the watershed. It will also serve as a reference for problem solving and decision making throughout the invasive species management process. The Invasive Species Prevention and Response Plan has three goals:

1) Implement programming that can prevent new invasive species from entering Conesus Lake.

2) Create an early detection and rapid response program that can detect new invasive species while eradication remains a feasible goal.

3) Manage the existing populations of invasive species, both in-lake and in the watershed, in a realistic and efficient manner that minimizes ecosystem impacts and the risk of harm to human health, recreational use, and the economy given existing resources and funding opportunities.

The goals of the Invasive Species Prevention and Response Plan are applied in alignment with the goals and objectives of the Conesus Lake Watershed Management Plan, namely:

- To ensure the sustainability of designated uses for Conesus Lake and its continued role as a positive influence on the social and economic well-being of watershed communities.

- To improve water quality conditions in Conesus Lake to ensure its continued use as a water supply and to make it more attractive for recreational use.

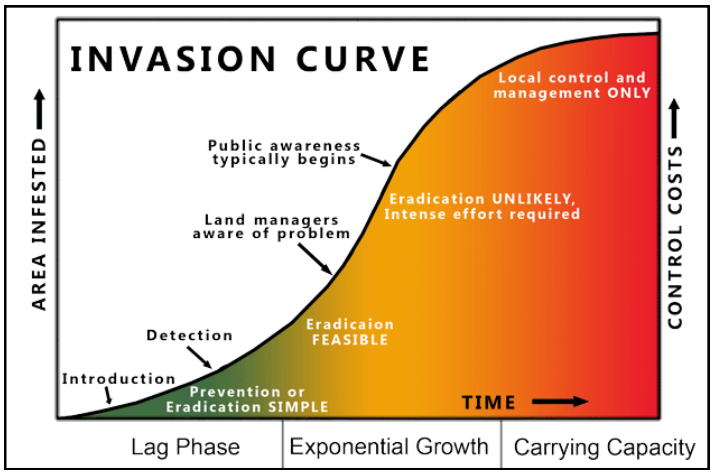
2013 FOCUS ON THE CONESUS LAKE WATERSHED COUNCIL INVASIVE SPECIES PREVENTION AND RESPONSE PLAN (CONTINUED)

Organizational collaboration is an important part of this Plan. The CLWC Invasive Species Subcommittee will regularly provide progress updates and project material to the CLWC Technical Committee. The membership includes representatives from the Livingston County Planning Department, the Livingston County Department of Health, the Genesee/Finger Lakes Regional Planning Council, Conesus Lake Association through the Invasive Species Project Team, and New York State Office of Parks, Recreation and Historical Preservation. Additional partners may be invited to participate according to specific program needs.

The Plan consists of three components: Prevention, Monitoring and Early Detection/Rapid Response.

Prevention

Prevention is the most cost-effective management strategy to control invasive species. Increasing awareness of invasive species issues and educating the public on best management practices focused on prevention is the key to mitigating the risk of harm from invasive species. Once a species becomes established, direct costs associated with management and indirect economic losses can spiral out of control. Identifying pathways and vectors is essential for preventing the spread of invasive species. Therefore, it is critically important to address human activities that can accelerate the distribution of invasive species. The Plan identifies common activities that can spread invasive species, and recommends associated actions that can help prevent the spread.



The Invasive Species Invasion Curve emphasizes the importance of addressing new invasions in the early stages.
Image courtesy of Alaska Department of Natural Resources

Monitoring

A well-designed monitoring program is essential for understanding the status of invasive species. Existing monitoring programs, supported by agencies and organizations including CLWC, Livingston County and its academic partners, water purveyors, the New York State Department of Environmental Conservation (NYSDEC), the Finger Lakes Institute, and the Finger Lakes-Lake Ontario Watershed Protection Alliance (FLLOWPA) all have a role. The Conesus Lake Watershed Manager will coordinate with data collection organizations to maintain a database.

Early Detection/Rapid Response

Using the NYSDEC Rapid Response Framework for Invasive Species as a guide, the Invasive Species Prevention and Response Plan defines a protocol for detecting and responding to a newly detected invasive species infestation. Early detection is essential so that new invasive species populations can be identified while they are still of manageable size. Once a new infestation is confirmed, the team will evaluate and recommend effective strategies for mitigation.

CONESUS LAKE BOAT LAUNCH INVASIVE SPECIES PREVENTION FEASIBILITY STUDY

Recreational boats are one of the primary methods of transport for aquatic invasive species, according to preliminary results from a University of Wisconsin Madison study[1] on aquatic invasive species and boater behavior. The study concluded that boaters, not waterfowl, are the primary vector responsible for the overland transport of aquatic invasive species.

Zebra mussels on boat.
Image courtesy University of Nevada.

Aquatic invasive species have multiple means of transport on boats. Plant fragments can be caught on boat and trailer equipment. Invasive zooplankton, as well as adult or juvenile forms of mollusk species, can attach to the smooth sides of boats. These animals may also be found in the bilge and other areas of the boat that retain lake water. These "aquatic hitchhikers" are usually not visible to the naked eye.

Conesus Lake has a single public boat launch for motorized boats. A feasibility study was conducted in 2013, which reviewed the suitability of various invasive species prevention methods in light of the physical nature of the launch facility, as well as the current institutional framework that might affect feasibility of implementing these methods. The report concludes with recommendations from the Technical Committee and the Invasive Species Subcommittee.

Conesus Lake Boat Launch

The Conesus Lake Boat Launch is located on East Lake Road in the Town of Livonia. The launch is owned and operated by the New York State Office of Parks, Recreation, and Historical Preservation (NYSOPRHP); the agency staffs the boat launch between late April and mid-October with a parking attendant. The attendant's primary responsibility is to collect the fee from launch users.

An impressive number of boats use the public launch on Conesus Lake each year. In 2012, the monthly attendance count ranged from 299 users in October to 7,750 users in July. The total attendance for the period was 23,692. In 2013, a total attendance of 22,928 was reported.

Conesus Lake State Park boat launch and parking area.
Image courtesy I Love The Finger Lakes (web site www.ilovethefingerlakes.com)

Aquatic Invasive Species Prevention Best Management Practices

Aquatic invasive species prevention best management practices generally follow a "Clean, Drain, Dry" procedure. If a boat is to be launched into a different body of water before it has a chance to properly dry, a wash with hot water or disinfectant would be needed for complete decontamination.

[1]*Wisconsin Department of Natural Resources, Madison, WI, Weekly News. "Wisconsin Study Confirms that Boaters, Not Ducks, Moving Invasive Species Around." March 5, 2013.*

CONESUS LAKE BOAT LAUNCH INVASIVE SPECIES PREVENTION FEASIBILITY STUDY (CONTINUED)

Evaluation of Prevention Strategy Alternatives

The feasibility study evaluated five prevention strategy alternatives.

1. No Action—No direct cost, but there are indirect costs due to negative economic impacts of new invasive species introductions.
2. Structural Prevention Strategies—These include providing the infrastructure for boaters to use, such as weed disposal facilities or a high temperature wash station.
3. Inspection Prevention Strategies—These include promoting self-inspection, conducting voluntary inspection by paid stewards, or requiring mandatory inspections.
4. Regulatory Prevention Strategies— Implement local legislation prohibiting the transport of aquatic invasive species between waterways by boat and/or trailer.
5. Educational Prevention Strategies—Promote the message of invasive species awareness to boaters via message boards, local radio broadcasts, or educational kiosks.

Past and Current Prevention Strategies

An educational approach was used at the boat launch in 2012 and 2013. Public education pamphlets were left with the boat launch attendant for distribution to boaters. Laminated "Stop Aquatic Hitchhikers" signs were also posted at the launch in 2012. In 2013, NYSOPRHP installed similar signage at all of their facilities. The signs alert boaters to their role in spreading invasive species and provide instructions on how to decontaminate a boat.

In addition to these measures, in 2013 the Finger Lakes Institute inaugurated the Boat Launch Stewards Program on Conesus Lake. Through this program, funded through the Great Lakes Restoration Initiative, a paid Watercraft Steward speaks with incoming boaters about invasive species and offers a voluntary boat inspection, including manual decontamination of visible mud and vegetation. The grant funding covered 15-20 paid steward hours per week, with hours concentrated during peak boating times. Additional donations of $2,000 from both FLLOWPA grant funds and the CLA supported extending this program to employ two full-time Boat Launch Stewards in 2013.

Recommendations

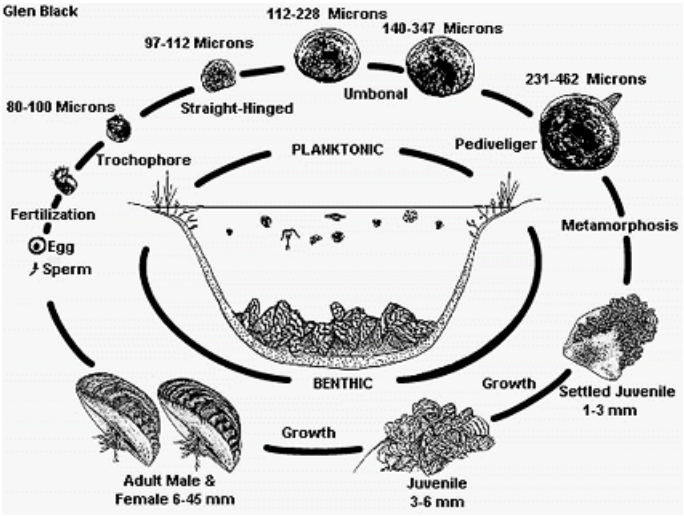
The Watercraft Steward program should continue, and should expand to collect additional data on invasive species removal and public perception. The Invasive Species Subcommittee should assess the data and determine potential programming needs for the future. In addition to the Watercraft Steward Program, the Subcommittee will work on additional signage and weed disposal stations for the boat launch. The CLA, Invasive Species Subcommittee, and NYSOPRHP are also exploring the potential for high visibility "Clean, Drain, Dry" signage at the boat launch in cooperation with the Conesus campaign. Continued partnering with the Finger Lakes Institute is recommended as well.

STUDIES OF ADULT AND LARVAL ZEBRA MUSSEL POPULATIONS IN CONESUS LAKE, NY (SUMMER 2013)

Zebra mussel larvae were first identified in Conesus Lake during the summer of 1992. Adult mussels quickly occupied the south basin of the lake, then spread with prevailing currents northward into the north basin. By fall of 1998, zebra mussels inhabited every suitable benthic (lake bottom) habitat. The animal remains present in the lake today. This invasive species affects the native ecosystem by growing in dense groups, outcompeting native species for food and habitat, altering the nutrient balance, and clearing the water of suspended material. The shells of dead mussels are sharp, and where they cover the bottom in shallow areas of the lake pose a hazard to recreational users.

2013 Studies of Zebra Mussels

A survey of the zebra mussel (*Dreissena polymorpha*) populations was conducted during the summer of 2013 by Dr. Isidro Bosch, Todd Shuskey, Thomas Collins, and Alyssa Smith of the Department of Biology at SUNY Geneseo. The primary purpose of this survey was to assess the status of the zebra mussel population by sampling both adult and larval stages of the life cycle during the summer reproductive season.



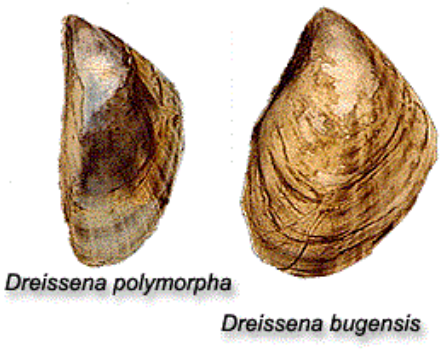
Life cycle of the zebra mussel. *Image from US Army Corps of Engineers web site http://el.erdc.usace.army.mil/zebra/zmis/zmishelp4/life_cycle.htm*

A second purpose was to determine whether quagga mussels—another invasive species—had invaded the lake. The quagga mussel (*Dreissena bugensis*) is similar to the zebra mussel and was not recognized as a distinct species until 1991. Quagga mussels have replaced the zebra mussel as the dominant species in most habitats of the Great Lakes and have spread to the deeper Finger Lakes.

Methodology

The 2013 study consisted of evaluating two stages of the zebra mussels' life cycle: adults living at the bottom and early life-stage planktonic larvae (veligers) that are present in the water column. Adult mussels were collected from seven representative locations around the lake, all but one of which was also sampled during the most recent mussel survey in 2000. At each location, a square made of PVC pipe (surface area 0.125 m^2) was placed on the bottom, and mussels present in the square were collected by hand. In the lab, samples were sorted and measured for weight, height and length.

The shape of the shell was used to distinguish between zebra and quagga mussels. Quagga mussel shells are rounder, while zebra mussel shells have a more spear-headed shape. The lower edge of the

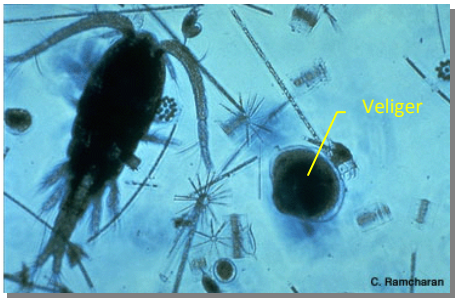


Zebra mussel at left, quagga mussel at right.
Image courtesy the US Army Corps of Engineers web site, from identification section authored by Dr. S. Jerrine Nichols, U.S. Geological Survey, Great Lakes Research Center.

STUDIES OF ADULT AND LARVAL ZEBRA MUSSEL POPULATIONS IN CONESUS LAKE, NY (SUMMER 2013) (CONTINUED)

zebra mussel is flattened, while the quagga is rounded. When set on a flat surface, bottom side down, the zebra mussel will not tip; the rounded base of the quagga mussel will cause it to tip to one side.

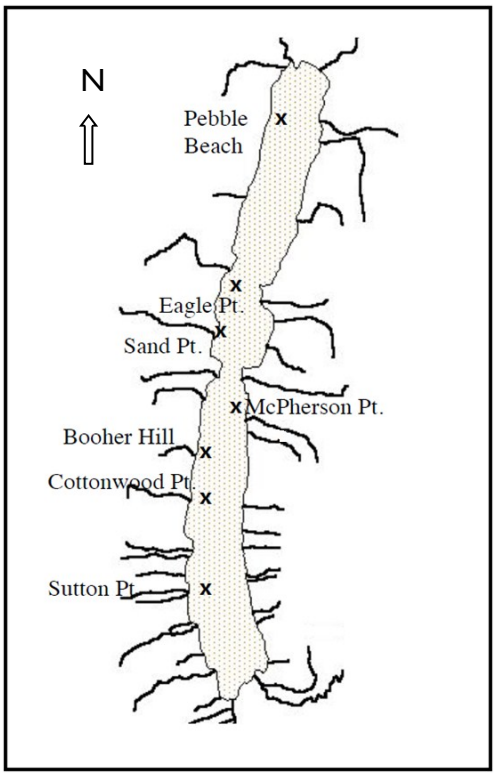
The early life stage larvae (veligers) were also sampled from the center of the south basin of the lake over a depth of 18 to 20 meters. Plankton collections were taken generally on a weekly basis during the summer. Samples were sorted under a stereomicroscope with 50x magnification to find veligers. Size measurements of the veligers were taken using an compound microscope with 200x magnification.



Zebra mussel veliger with other aquatic plankton (copepods, diatoms, and rotifers).
Image courtesy Charles Ramcharan, Wisconsin Sea Grant. Army Corps of Engineers web site http://el.erdc.usace.army.mil/zebra/zmis/zmishelp/veliger_analysis_techniques.htm

Results

Based on the results of the studies, Dr. Bosch and his colleagues concluded that there are still vast numbers of zebra mussels in Conesus Lake, and that the species continues to be a dominant component of the ecosystem. Sample results indicated that:



Map showing seven study sites surveyed for adult zebra mussels.
Image courtesy Bosch et al, 2013 Studies of Adult and Larval Zebra Mussel Populations in Conesus Lake.

- Adult mussels are present in Conesus Lake wherever there is hard substrate, from shoreline to a depth of about 8-9 meters. Living mussels occupy a layer a few centimeters thick overlying a much thicker base of dead mussel shell material.

- No adult quagga mussels were identified at the seven study sites surveyed.

- Adult mussel population density in 2013 was, on average, about 15% lower than reported by the 2000 survey. Densities ranged from an average low of 6,052 mussels per square meter to an average high of 28,021 per square meter.

- The density of mussel veligers (larvae) in the water column ranged from a low of 74 per cubic meter to a peak of 9,750 per cubic meter. The peak in veliger density coincided with peak chlorophyll concentrations and high turbidity, both of which indicate an algal bloom had developed in the water column.

- While the density of mussel veligers averaged 3,263 per cubic meter in 2013, the density fluctuated widely through the summer. As compared with historical measurements, veliger density for 2013 was considered moderate. The minimum average of 3-6 veligers per cubic meter was reported for 1997 and 1999, while the maximum average of 12,231 larvae per cubic meter was reported in 1995.

RAIN GARDEN INSTALLATION AT LONG POINT PARK

Rain gardens have a role in the control of storm water runoff from the watershed into Conesus Lake. By intercepting and retaining runoff, a rain garden provides an area for stormwater to seep into the ground, replenishing the ground water while absorbing nutrients that may otherwise reach the lake and contribute to problems such as algal blooms.

In 2012, the Livingston County Planning Department received a $5,000 grant from Scott's Products for a rain garden and public education campaign at Long Point Park. This grant was administered through the New York State Soil and Water Conservation Committee and the Finger Lakes-Lake Ontario Watershed Protection Alliance.

Installation and planting of the rain garden at Long Point Park was completed on June 10, 2013. The Livingston County Planning Department, in partnership with the Town of Geneseo and the Livingston County Soil and Water Conservation District, participated in constructing the rain garden.

On June 19, 2013, the Planning Department conducted a Green Infrastructure Workshop at Long Point Park. The new rain garden was featured during this workshop.

Pictured from left to right: Penny Trimm, Miranda Reid, Darlene Essler, Angela Ellis, Heather Ferrero, and Mary Underhill.
Image courtesy Livingston County Planning Department

To inform visitors to the park about rain gardens, the Conesus Lake Watershed Council (CLWC) plans to design an educational sign for the Long Point Park Rain Garden. An informational brochure for landowners wishing to install rain gardens on residential properties is also planned, along with an instructional workshop on rain garden installation. The Public Education and Outreach Committee of the CLWC met in September 2013 to discuss the form and content of these educational materials. The Watershed Manager is developing content for the sign at Long Point Park and the informational brochure.

Green Infrastructure Workshop held at the rain garden at Long Point Park on June 19, 2013.
Image courtesy Livingston County Planning Department

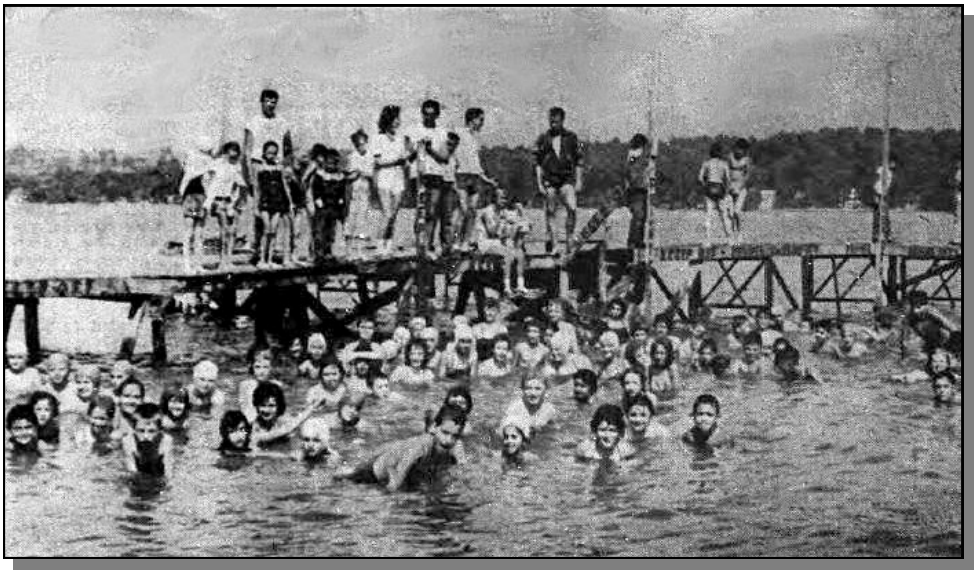
2013 CONESUS LAKE BACTERIAL MONITORING

Image courtesy Camp Stella Maris on-line photo gallery.

The Livingston County Department of Health samples nearshore waters at designated bathing beaches in Conesus Lake each summer to test for the presence of fecal coliform bacteria. This class of bacteria is used to indicate the potential presence of pathogenic (disease-causing) microorganisms. In 2013, samples were collected at three sites: Long Point Beach, Southern Shores Beach and Camp Stella Maris. Results are compared to the state ambient water quality standard for bacteria, which is used by the Department of Environmental Conservation to evaluate water quality and by the Department of Health to evaluate suitability for swimming at designated beaches.

The state's ambient water quality standard for fecal coliform bacteria is 200 colony forming units per 100 ml of lake water (cfu/100mL). The standard is calculated as the geometric mean of a minimum of five samples per month. The Department of Health collected one sample per week at each of the three sites starting May 21st and ending on September 3rd.

Results of the 2013 monitoring consistently met the public health standards for each of the three sites during each summer month. Overall, the geometric mean for the 2013 summer was 8 cfu/100 mL. The 2013 results are consistent with bacterial surveillance monitoring conducted in prior years.



A photo of children swimming and playing on the dock at Long Point Park in 1955.
Photo courtesy of Lore Disalvo. Web site: http://www.conesuslakeny.org/index.htm

# in Plan	Recommendation	Priority	Action Taken
All	Secure funding outside of the EPF funding source to implement CLWMP activities. Investigate and apply for funds from grants opportunities as they arise.	High	• The Town of Geneseo, Livingston County Planning Department and Livingston County SWCD completed a rain garden installation and planting at Long Point Park on June 10, 2013. The rain garden was featured at a June 19, 2013 Green Infrastructure Workshop at Long Point Park. • Additional funds for the rain garden were obtained through a Scott's Products grant.
A-1	Review and amend zoning regulations to improve consistency in near-lake areas.	High	• The Livingston County Planning Department provided mapping and technical assistance to the Town of Springwater for a proposed comprehensive plan.
A-3	Develop public education campaigns on BMPs for lake and watershed residents. Develop public education campaigns to include erosion control and lake-friendly landscaping.	Medium	• The Water Quality Committee focused 2013 efforts on invasive species prevention and public education. • The Invasive Species Subcommittee collaborated with NYSOPRHP to develop additional signage for the boat launch. • The CLA staffed water quality booths at both the CLA Arts and Crafts Show and the Autumn in the Village festival. • The CLA organized a lake cleanup project with the Livingston County Office of Workforce Development Mobile Work Crew. • The public education kiosk at Long Point Park was completed by the Eagle Scout and Town of Geneseo. The Town of Geneseo, the Public Education and Outreach Committee, and the Watershed Manager are developing content. • The Public Education and Outreach Committee met on September 17, 2013, to discuss form and content of an educational sign for the Long Point Park Rain Garden. • The Watershed Manager is developing educational content for the sign and an informational brochure for landowners wishing to install rain gardens on residential properties. • An instructional workshop on rain garden installation was conducted in June.
B-1	Secure funding to help mitigate the financial impacts of changes in agricultural practices on the producers.	High	• In progress. Agencies will continue these activities annually as part of their existing programs. • NRCS has received Environmental Quality Incentives Program (EQIP) applications for three watershed farms. EQIP is a voluntary program that provides financial and technical assistance to agricultural producers for planning and implementing conservation practices.

Key to Acronyms:

BMPs - Best Management Practices
CLA - Conesus Lake Association
CLWMP - Conesus Lake Watershed Management Plan
EPF - Environmental Protection Fund
NRCS - Natural Resource Conservation Service
SWCD - Soil and Water Conservation District

# in Plan	Recommendation	Priority	Action Taken
B-2	Implement practices that will reduce non-point source pollution from farms.	High	• The Livingston County SWCD worked on an underground outlet for a terrace system, a grass detention basin, and an agricultural chemical mixing facility for two watershed farms.
C-1	Develop and implement program to restore and stabilize stream banks in the watershed.	High	• Towns of Conesus and Livonia EPF streambank remediation grant (Phase 1) - Meetings were held with the engineering consultant, municipalities, and landowners to discuss design alternatives and easement access. Final design documents and permitting are in progress; the State granted an extension to March 31, 2014. • Towns of Livonia and Geneseo EPF streambank remediation grant (Phase 2) - Meetings were held with the engineering consultant, municipalities, and landowners to discuss design alternatives and easement access. Final design documents and permitting are in progress. • Streambank buffer initiative. The SWCD is working with a watershed farm on a streambank stabilization project.
C-3	Develop public education campaigns on the impact of human activities on the health of the Lake.	Medium	• Participated in the Finger Lakes Institute program for Boat Launch Stewards. • The 2012 refrigerator magnet BMP program for rental properties was expanded in 2013 to make the magnets available to all lakeshore property owners.
E-2	Develop a public education campaign targeting the effects of recreational boating on water quality	High	• The Public Education and Outreach Committee met in September to discuss form and content of a publication to distribute the Conesus Lake Bathymetric Survey and boating water quality and invasive species prevention best management practices. • The Watershed Manager is developing the design for the bathymetric survey publication.
E-2	Develop a public education campaign promoting invasive species awareness	High	• On July 10, 2013, the Livingston County Board of Supervisors passed a resolution supporting invasive species prevention efforts. • The Watershed Manager hosted an invasive species informational booth at the Town of Groveland Bicentennial Lake Day Youth Fishing Derby in July 2013. • The Watershed Manager presented on the CLWC Invasive Species Prevention and Response Plan at the New York State Association of Counties conference on September 26, 2013.

Key to Acronyms:

BMPs - Best Management Practices
CLWC - Conesus Lake Watershed Council
SWCD—Soil and Water Conservation District
CLA - Conesus Lake Association
EPF - Environmental Protection Fund

# in Plan	Recommendation	Priority	Action Taken
G-1	Investigate and implement effective methods to control the spread of non-native (exotic) organisms.	High	• The CLWC Invasive Species Prevention and Response Plan was approved on 5/10/13. • The CLWC reviewed and accepted the Conesus Lake Boat Launch Invasive Species Prevention Feasibility Study on November 8, 2013. • The CLA and the Invasive Species Subcommittee planned the 2013 volunteer invasive species monitoring program. Six invasive species identification workshops trained 14 volunteers in 2013, who responded to over 26 reports for suspect invasive species, though no invasive species were confirmed. • The CLA held a Hydrilla Hunt rake toss and dive survey on September 15th. • The Finger Lakes Institute received Great Lakes Restoration Initiative (GLRI) grant funding for a regional Watercraft Steward Program. Two paid watercraft stewards stationed at Conesus Lake boat launches educated and assisted boaters to prevent invasive species introductions. • New York State Office of Parks, Recreation and Historic Preservation authorized the development of an additional invasive species programming at the East Lake Road Boat Launch for 2014.
G-1	Investigate and implement effective methods to control the spread of non-native (exotic) organisms.	High	• The Watershed Manager and Planning Assistant continued to participate in the Finger Lakes PRISM through monthly conference calls and workshops. PRISM is an information-sharing group formally created by New York State to look regionally at the problem of aquatic and terrestrial invasive species.
G-4	Initiate effort to determine if increased stocking of walleye fingerlings, or other species, would be an effective biological control in Conesus Lake.	High	• In July, 2013, the CLA stocked two sizes of walleye reared at the Finger Lakes Community College. The stocked fish included 125 measuring between 6 and 8 inches, and 200 measuring around 3 inches. The CLA purchased an additional 1500 fingerlings from a private hatchery for late fall stocking.
H-1	Conduct an annual monitoring program of Conesus Lake and its watershed. An annual monitoring meeting should be held to coordinate the monitoring program.	High	• Annual monitoring meeting was held in January 2013. • SUNY Geneseo surveyed the larval and adult mussel populations in Conesus Lake. • Livingston County Department of Health conducted the public bathing beach monitoring and blue-green algae surveillance programs during 2013.
H-2	Prepare and distribute an annual Conesus Lake and Watershed Report Card. Update the Conesus Lake Watershed Characterization Report	High	• 2012 Report Card completed and presented to the CLWC. • The final draft of the ten-year Characterization Report update was approved by the Watershed Council at the May 2013 meeting.

Key to Acronyms:
CLA - Conesus Lake Association
PRISM - Partnership for Regional Invasive Species Management
NYSOPRHP– Office of Parks, Recreation & Historic Preservation
CLWC - Conesus Lake Watershed Council
SUNY - State University of New York

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