Conesus Lake and Watershed Report Card

Assessment of the Conesus Lake Watershed Management Plan in 2006

Conesus Lake Watershed Council

May 2007

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 designed to reduce nonpoint source pollution. In addition, the annual summary provides a forum for tracking conditions in Conesus Lake and highlighting new information.

MAJOR ACCOMPLISHMENTS

The Conesus Lake Watershed Council was created in December 2003 when nine watershed partners signed an Intermunicipal Agreement to implement the recommendations of the Conesus Lake Watershed Management Plan (CLWMP). The Watershed Council met quarterly in 2006. Substantial progress was made on a number of CLWMP objectives, as summarized below. Three of these initiatives (starred) are described in detail on the pages that follow.

Objective: Reduce inputs of nutrients, sediments, microorganisms, and other substances that can degrade the quality of Conesus Lake.

- Completion of the Local Laws project, which identifies ways to modify local zoning and site planning laws to effectively reduce nonpoint source pollution.
- Review and revision of local sediment and erosion control laws for watershed towns.
- Continue to advance whole farm planning and prepare for CAFO implementation.
- Implement Best Management Practices (BMPs) on watershed farms.* Funds have been awarded from federal, state, and private foundation sources to help offset the costs.
- Continued progress with sanitary sewers in the Hamlet of Conesus.
- Continue to work towards New York State Department of Health approval of watershed rules and regulations.
- Survey streambanks and find effective measures to reduce erosion.*
- Continue to implement improvements to watershed roadways.

Objective: Modify in-lake processes in ways that will improve recreational quality.

- Pilot test a solar-powered mixing device (SolarBee®) and measure effects. *
- Supplement population of weevils in an effort to control Eurasian watermilfoil.
- Continue stocking with walleye fingerlings reared at the Finger Lakes Community College.

Objective: Track conditions and evaluate the effectiveness of control measures.

- Monitor nutrient and sediment loss and growth of weeds and algae in areas affected by BMPs; compare with control areas.
- Continue watershed inspection and monitoring activities.

FOCUS ON AGRICULTURAL BEST MANAGEMENT PRACTICES (BMP)

In 2006, the Livingston County Soil and Water Conservation District completed nine whole farm nutrient management plans for farms in the Conesus Lake watershed. These plans detail farm-specific agricultural BMPs for more than 5,000 acres within the lake watershed. Funding for this effort was provided through New York State Agricultural Nonpoint Source Funds. The nutrient management plans will be used as the basis for future grant requests for funds to implement the recommended practices.

In addition, as reported by Nathan Herendeen, Extension Educator-Field Crops and Soils, Cornell Cooperative Extension, several agricultural BMPs were completed in 2006. A farm located within the western portion of the Conesus Lake watershed invested in construction and operational changes that will reduce the potential for loss of materials to waterways. A portion of the costs were shared under the USDA-funded grant to Dr. Joe Makarewicz of SUNY-Brockport. Other watershed farms are progressing with BMPs as well.

Four BMPs were completed during 2006 on a dairy farm located in the Graywood Creek subwatershed.

- Tile (sub-surface drainage) outlets were modified to reduce erosion at the discharge to Graywood Creek. Additional sub-surface drainage was installed on an area of the farm within the Hanna's Creek subwatershed.
- A small grass filter strip was planted on the southeast corner of the farm where gully erosion occurred during the extreme storms of Summer 2005.
- A runoff control standpipe and basin were installed on the northwest corner of the farm. This allows runoff to be conveyed sub-surface to the highway drainage ditch and eliminates standing water in the heifer pasture.
- The heifers are now watered at a watering tub at least 200 feet from the drainage area.

Other BMP activity on area farms include:

- The second year of a "Nitrogen Fertilizer Rate for Corn Following Sod" research trial was completed on a farm in the Conesus watershed in conjunction with Cornell Crops and Soils staff.
- A whole farm plan was initiated by the Livingston County Soil and Water Conservation District on a dairy farm that is not participating in the USDA Grant Project.
- Separation of roof water from barnyard runoff was completed on two east side farms. The barnyard elimination project was started on one east side farm, but not completed in 2006.

FOCUS ON THE SOLARBEE PILOT STUDY

The Conesus Lake Watershed Council agreed to implement a pilot test of the SolarBee technology in Conesus Lake during summer 2006. Funds for the pilot test and monitoring were contributed by Livingston County, using grant funds from the Finger Lakes—Lake Ontario Watershed Protection Alliance, the Conesus Lake Association, the Town of Geneseo, the Town of Livonia, the Town of Groveland and the Town of Conesus. Other volunteers and contractors supported this effort, notably Professor Sid Bosch of SUNY-Geneseo, and the Livingston County Sheriff's Office Marine Patrol.

Three SolarBee units were installed by Pump Systems International (PSI) in late April 2006. Water quality conditions were monitored throughout the summer season. Control areas, distant from the SolarBees, were used as a baseline for comparison.

The summer monitoring program focused on parameters identified as likely to show improvement. Bacterial levels, water clarity, algal abundance, and metaphyton (filamentous algae) were monitored. In addition, perception of the lake's suitability for recreational use was tracked. According to Pump Systems International, the abundance of aquatic macrophytes, such as Eurasian watermilfoil, would not respond to the first year of operation.

Results of the 2006 pilot program were promising, but not conclusive. Water clarity improved in the northern lake basin near the units. This improvement was measurable by the testing program and by the public perception of crystal clear water during the middle of the summer. This improvement in water clarity was not evident at the Sacketts Harbor site on the lake's western shoreline. The monitoring data support a finding of small and transient differences consistent with improved water quality conditions in close proximity to the devices deployed at the northern site. However, the size of Conesus Lake and its many tributary inflows make it challenging to attribute improvements to the presence of the SolarBee. Natural lake processes, such as wind-induced mixing and continued inputs of nutrients and sediment from the watershed, have the potential to overwhelm the small positive effect of the units.

The three SolarBee units were left in the lake over the winter. Monitoring and analysis of conditions during the second year of deployment will begin in Spring 2007.

SolarBee deployed in Conesus Lake, Summer 2006

FOCUS ON THE STREAMBANK SURVEY

Sediment loading to Conesus Lake from tributary streams and rivulets has been determined to have significant detrimental effects to lake water quality. Livingston County was awarded a grant from the New York State Quality Communities Program. The grant funds from New York State will be used primarily for professional services directed at identifying the underlying causes of the high sediment transport through the watershed tributaries. The consultant will also recommend effective remedial actions for the most unstable stream segments.

Stantec Consulting Services, Inc. was selected to complete the stream corridor assessment. Staff engineers and scientists surveyed over 52,000 linear feet of stream corridor (about 10 miles), including rivulets. In total, 12 streams and rivulet areas have been surveyed, photographed, and geo-referenced.

- Wilkins Creek
- Unnamed tributary to Wilkins Creek
- Densmore Creek
- Central Creek
- North Gully
- South Gully
- Southwest Creek
- North McMillan
- Groveland (Raschi) Rivulet
- Long Point Creek
- Sand Point Creek
- Eagle Point Creek

The report generated by this streambank study will be used as a basis for future grant requests to implement the recommended remedial projects.

Photo of bank erosion along the upper middle reach of Wilkins Creek.
[*Stantec Consulting Services, Inc. September 2006*]

PART B: CLWMP RECOMMENDATIONS STATUS UPDATE

Recommendation	# in Plan	Priority	Completed	Underway	No Action
1. Creation of a Conesus Lake Watershed Council and contracting with a Watershed Manager		High	X		
2. Review and amend zoning regulation	A-1	High		X	
3. Secure funding to help mitigate the financial impacts of changes in agricultural practices on the producers.	B-1	High		X	
4. Implement practices that will reduce nonpoint source pollution from farms.	B-2	High		X	
5. Develop and implement programs and partnerships to facilitate removal of waste materials from farms.*	B-3	High			X
6. Develop programs for public education and outreach for both the agricultural and the non-agricultural community.	B-4	High	X (on-going)		
7. Develop and implement program to restore and stabilize streambanks in the watershed.	C-1	High		X	
8. Provide training on erosion control practices for municipal highway departments.	D-1	High	X (on-going)		
9. Revise Watershed Rules and Regulations	E-1, E-6	High	X		
10. Develop a public education campaign: • Effect of boat speed on weeds (creates weed-chop) • Precautions to follow when discarding unused bait or transporting bait from one waterbody to another (exotic species introduction). • Need to clean and inspect boat (body, bilge, coolant system, etc.) and trailer when transporting from one waterbody to another (exotic species introduction). • Existing boat and personal watercraft laws.	E-2	High	X (on-going)		
11. Continued enforcement of existing boat and personal watercraft laws.	E-3	High	X (on-going)		
12. NYSDEC should review and update its 1994 safe yield allocation calculation for Conesus Lake, and make any necessary revisions to water allocations for public supply and wastewater dilution.	F-1	High		X	
13. Investigate and implement effective methods to control the spread of non-native (exotic) organisms.	G-1	High		X	
14. Initiate effort to determine if increased stocking of walleye fingerlings, or other species, would be an effective biological control in Conesus Lake.	G-4	High		X	

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Recommendation	# in Plan	Priority	Completed	Underway	No Action
15. Develop and implement a program for cleaning accumulated aquatic plants and algae along the shoreline of Conesus Lake.	G-2	High		X	
16. Initiate effort to determine if alum treatment to control release of phosphorus from deep lake sediments would be effective in Conesus Lake. Proceed with plans for implementation if effectiveness is warranted and monitor for environmental impacts.	G-3	High		X	
17. Determine if new technologies would be effective in Conesus Lake to improve water quality or enhance the recreational use of the Lake. Proceed with plans for implementation if effectiveness is warranted and monitor for environmental impacts.	G-8	High		X	
18. Initiate effort to determine if water circulation devices, including, but not limited to, SolarBee, would be effective in Conesus Lake to decrease algae and nuisance aquatic plant concentrations. Proceed with plans for implementation if effectiveness is warranted and monitor for environmental impacts.	G-9	High		X	
19. Conduct an annual monitoring program of Conesus Lake and its watershed. An annual monitoring meeting should be held to coordinate the monitoring program.	H-1	High		X (on-going)	
20. Prepare and distribute an annual Conesus Lake and Watershed Report Card	H-2	High	X (on-going)		
21. Create an integrated aquatic plant management plan for Conesus Lake		High		X	
22. Adopt local sediment and erosion control laws based on the CLWMP Model Erosion and Sediment Control Law	A-2	Medium	X (lakeshore towns)		
23. Develop public education campaigns • Encourage planting and protection of streamside vegetation • Discourage use of herbicides, pesticides, and fertilizers on shoreline properties • Erosion control and lake-friendly landscaping	A-3	Medium	X (on-going)		
24. Implement best management practices, such as hydroseeding or other approved methods, as soon as possible after road construction or maintenance activities occur in the watershed.	D-2	Medium		X (on-going)	
25. Municipal Highway Departments should develop a plan, subject to available funding, to remediate ditches in poor condition.	D-3	Medium		X	

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Recommendation	# in Plan	Priority	Completed	Underway	No Action
26. Amend Town dock laws to add the provision of 24-hour access to toilet facilities to the list of requirements for granting a Special Use Permit.	E-4	Medium		X	
27. Winterize facilities at the State Boat Launch on East Lake Road and at the Town of Geneseo's Long Point Park to permit year-round use of public toilets.*	E-5	Medium			X
28. Extend sewer system	F-2	Medium		X	
29. Control sanitary sewer overflows within the collection system.	F-3	Medium		X	
30. Initiate an experimental program for control of aquatic weeds using the aquatic moth and/ or weevil.	G-5	Medium		X	
31. Identify and develop sites for regional storm-water treatment areas in cooperation with NYSDEC and other stakeholders.	C-2	Low		X	
32. Develop plan to phase-in computer-controlled spreaders on trucks used for winter deicing (includes training, funding, and use of the equipment). Promote sensible deicing prac-tices: develop incentives and/or disincentives. *	D-4	Low			X
33. Develop public education campaigns: • Sensible winter driving • Why and when are road ditches cleaned • Need to keep yard debris and trash out of road ditches	D-5	Low	X (on-going)		
34. Develop protocol and timeline to inventory septic/sanitary systems within the watershed.	F-4	Low		X	
35. Develop program for suctioning aquatic weeds from designated public areas that are too shal-low for harvester to maneuver.	G-6	Low		X	
36. Develop a weed harvesting program either by contracting with outside vendor or purchasing equipment.*	G-7	Low			X

*These recommendations were not targeted for implementation in 2006

Key to Acronyms

CLA—Conesus Lake Association
CLWMP—Conesus Lake Watershed Management Plan
FLCC—Finger Lakes Community College
FSA—Farm Services Agency
G/FLRPC—Genesee/Finger Lakes Regional Planning Council
NYSDEC—New York State Department of Environmental Conservation
NYSDOH—New York State Department of Health
SEQR—State Environmental Quality Review
SWCD—Soil and Water Conservation District
TMDL—Total Maximum Daily Load

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