

FLOWPA FUNDAMENTALS

FINGER LAKES - LAKE ONTARIO WATERSHED PROTECTION ALLIANCE
FROM STREAMS, TO LAKES, TO GREAT LAKES
PROTECTING OUR WATER RESOURCES BEGINNING AT THE LOCAL LEVEL

IN THIS ISSUE:

GREAT LAKES RESTORATION INITIATIVE (GLRI)

GREAT LAKES RESTORATION INITIATIVE (GLRI)

IMPROVING WATER QUALITY IN THE NY LAKE ONTARIO BASIN



The Great Lakes Restoration Initiative (GLRI) is the investment by the federal government to protect, maintain, and restore the chemical, biological, and physical integrity of the Great Lakes. In Federal Fiscal Year 2010, FLOWPA was awarded \$998,749 for implementation of agricultural best management practices (Ag BMPs) in seven counties to improve water quality

in the Lake Ontario drainage basin through reduction of soil erosion, priority nutrient loading, and pollutant loading, (especially agrichemicals and petroleum-based products). The project also included cover crop education and research, conducted by the NWNY Dairy Livestock and Field Crop Team.

The grant was administered by the Finger Lakes Association (FLA), on behalf of FLOWPA. FLOWPA was responsible for meeting all of the contract reporting requirements, requesting funds for reimbursement, and maintaining communication with the assigned program manager from the United States Environmental Protection Agency.

FLOWPA staff also performed a limited number of site visits and completed desk audits for each project.

The following is breakdown of the total amount of GLRI funds received by each project partner and the matching funds that were contributed by the farmers/producers. A no-cost time extension was granted for this project. All work was completed prior to December 31, 2013.

On the following pages is a summary of the work that was accomplished by each of the project participants.

County	GLRI Award	Local Match
Monroe	\$158,116.00	\$81,374.00
Niagara	175,933.26	51,855.00
Onondaga	194,400.00	65,317.00
Orleans	41,977.50	0.00
Oswego	100,000.00	0.00
Schuyler	216,208.42	172,002.00
Tompkins	69,000.00	37,792.00
Cover Crop Education	24,613.82	5,604.00
Grant Administration	17,500.00	0.00
Total	\$998,749.00	\$411,944.00

FUNDAMENTALS

Monroe County

Monroe County completed 9 projects on four farms to reduce the amount of nutrients, sediment and agrichemicals entering the Lake Ontario drainage basin. The BMPs installed included:

Monroe County SWCD

- 3,600 feet of exclusion fencing to separate two horse paddocks from a NYS DEC listed 303 waterbody and an adjacent wetland;



Thomas Creek Fencing Project, before and after

- Barnyard and roof water runoff management systems including a 40 foot x 40 foot roofed barnyard, a 20 foot x 40 foot manure loading pad, access road and underground outlet lines;
- A 3,456 square foot agrichemical handling facility; and
- 2 secondary fuel containment facilities with heavy use protection areas.

Niagara County

Niagara County completed 4 projects to reduce the amount of nutrients, sediment and chemicals entering Lake Ontario. The projects consisted of:

- A 30,240 square foot bunk silo and leachate collection and treatment system;
- 11,700 square foot vegetated treatment system;
- A 1,200 square foot agrichemical mixing facility with a concrete containment pad;
- A 4,992 square foot agrichemical mixing facility with a 1,152 square foot containment pad; and
- Integration of chemical reduction practices via Smart Sprayer technology retrofits.

Niagara County SWCD



Bunk and concrete apron



Ag chemical handling facility

FUNDAMENTALS

Onondaga County

Onondaga County's portion of the GLRI funding was distributed to 14 agricultural operations to address water quality concerns from pasture and cropland erosion, in addition to surface and groundwater contamination from agrichemicals.

Highlights of this project include:

- Prescribed grazing systems implemented over 90 acres of pasture on 5 farms;
- 19,077 feet of pasture fencing and 2,600 feet of exclusion fencing;
- 4,890 feet of underground outlet pipe;
- 4,510 feet of waterline for alternative watering systems;
- 1,866 feet of grassed waterways and diversions;
- 4 new water and sediment control basins and 2 repaired; and
- 3 covered agrichemical mixing facilities (24x24, 16x25 and 30x20), designed for 125% containment.

Kristy LaManche



Covered Agrichemical Mixing Facility

Orleans County

Orleans County partnered with four producers to install grassed waterways that will reduce the amount of sediments, nutrients and pesticides entering Lake Ontario. The District installed over 4,370 feet of grassed waterways to replace traditional, steep sided farm ditches that were intended to accept both field runoff and drainage from underground tile field drainage systems. The grassed waterways are wide, low sloped drainage ditches that are kept vegetated year round. The grass vegetation helps slow the flow of the water, captures any sediment traveling with the runoff water, and takes up nutrients in the water for its own nutrition - keeping the nutrients from running off into our streams and Lake Ontario. The wide, flat design of these waterways allows them to be mowed on a regular basis to control noxious weeds, trees and brush growth.

Orleans County SWCD



Example of grassed waterway, before and after.

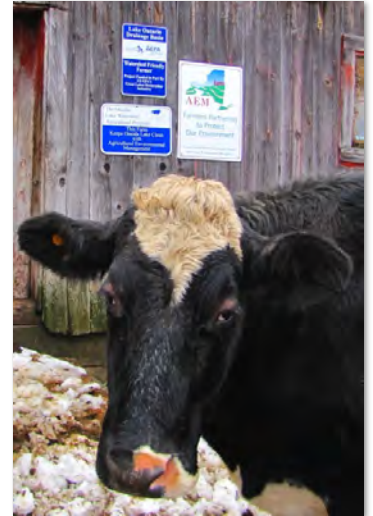
FUNDAMENTALS

Oswego County

Oswego County completed 3 projects to reduce the amount of soil erosion, sediment and nutrients entering Lake Ontario. Highlights of the District's projects include:

- 6,500 and 4,200 square foot barnyards with geotextile fabric;
- 900 feet of grassed waterways with culvert crossings;
- 500 square feet of laneways;
- 340 feet of drain tile and underground outlets to collect uncontaminated roof water;
- 325 feet of diversions;
- 325 feet of livestock exclusion fencing;
- 300 feet of access roads;
- 275 feet of roof gutters; and
- 2 frost-free watering systems.

Oswego County SWCD



Barnyard Project

Schuyler County

Schuyler County's portion of the GLRI funding was distributed to 5 vineyards for erosion and sediment control practices, 6 farms for pasture management practices, and 8 vineyards/orchards for pesticide reduction practices. The projects were designed to reduce sediment and nutrients from reaching local waterways that lead to Lake Ontario's tributaries. Highlights include:

- 33,546 feet of livestock fencing;
- 10.93 acres of pasture plantings;
- 3,910 feet of waterlines;
- 2,260 feet of grassed waterway and diversions;
- 11 alternative watering systems;
- 2 drop inlet structures and 700 feet of underground outlet pipe;
- 5 weather stations; and
- 5 pesticide sprayer retrofits.

Kristy LaManche



Stabilization Project

Tompkins County

Tompkins County completed pasture management projects on 7 farms in the Cayuga and Owasco Lake watersheds to reduce the amount of sediment and nutrients entering Lake Ontario's tributaries. The District's accomplishments included:

- 527,512 square feet of buffer area established;
- 14,350 feet of fencing;
- 2,350 feet of access roads and 2 stream crossings;
- 10 acres of pasture seeded and limed;
- 2 milkhouse waste collection systems; and
- 2 alternative watering systems.

Kristy LaManche



Milkhouse Waste Collection System

FUNDAMENTALS

NWNY / Cornell University Cooperative Extension Crop Cover Outreach and Education Program

The GLRI funds allocated to Cornell University Cooperative extension / NWNY Dairy, Livestock and Field Crops Team were used to establish three cover crop training centers to provide field demonstrations and education for farmers to implement cover crop best management practices. Crop rotations, cover cropping and reduced tillage practices have changed in recent years reducing water quality concerns and increasing farm productivity. Proper cover crop techniques reduce soil erosion and nutrient run off; in turn, increasing infiltration, holding nutrients in the soil, building organic matter and improving soil health. Many agricultural producers feel that cover cropping is costly to put into practice and that returns are minimal. The educational centers provided the information needed to educate farmers on the benefits of cover cropping.

CCE NWNY Dairy, Livestock and Field Crops Team



Three crop cover centers were established following the winter wheat harvest in Monroe, Livingston and Seneca Counties in August 2011. The trials focused on tillage radishes but clover, forage oats and peas were also featured. Three crop cover field tours took place in October 2011, were attended by 45 people and featured presentations from the farmers describing their learning experience with planting cover crops. Attendees also went home with a newly developed fact sheet (#64, Forage Radishes). In addition to the organized events, professionals and producers were encouraged to take self-guided tours of the cover crop centers.

At the conclusion of the 2011 growing season the project changed gears from an outreach and education program to a cover crop research project, led by Dr. Quirine Ketterings and her staff at Cornell University Nutrient Management Spear Program. Their research focused on dry matter, carbon and nitrogen accumulation in cover crops planted after a variety of small grains. For further information on this research project and the results of Dr. Ketterings work see the paper "Cover crop study: Cover Crops after small grains at Lott and Merrimac farms."

County	Soil Savings (tons/yr)	Phosphorus Savings (lbs/yr)	Nitrogen Savings (lbs/yr)	Petroleum, Pesticides and Other Savings (per year)
Monroe	19.9	103.0	168.0	194,640 gallons of clean rainwater diverted 26,950 gallons of petroleum products contained 8,450 gallons ag chemicals contained
Niagara				28,000 gallons of silage leachate contained 1,205 gallons and 3,829 pounds of ag chemicals contained
Onondaga	14.9	25.2	93.6	103,100 gallons of ag chemicals contained 7,156 gallons of clean rainwater diverted
Orleans	39.0	43.2	86.3	
Oswego	4.4	565.9	2,095.7	
Schuyler	111.4	410.4	819.5	47.6% reduction in pesticide use
Tompkins	1,220.0	148.0	10.0	
Total	1,409.6	1,295.7	3,273.1	

OVERALL RESULTS - This project was a great success, as noted in the table above. Soil, nitrogen, phosphorus and agrichemical savings exceeded the original estimates. FLOWPA is very pleased with the overall results of this project and would like to thank all of the project partners and producers for their involvement.

FUNDAMENTALS



FLOWPA **membership** includes the following New York State counties wholly or partially in the Lake Ontario drainage basin: Allegany, Cayuga, Chemung, Cortland, Genesee, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Schuyler, Seneca, Steuben, Tompkins, Wayne, Wyoming, Yates

The **mission** of FLOWPA is to facilitate processes that encourage watershed partnerships and implementation of action plans to protect and enhance water quality based on: Local needs assessment, Holistic approach, Information exchange and public education, Measurable goals and milestones

FLOWPA POLO SHIRTS ARE STILL AVAILABLE

Shirts are \$35 each, plus shipping, and are available in pistachio green or metro blue. The logo is fully embroidered. Contact the WRB at (315) 592-9663 to place your order.

Please visit our website at www.flowpa.org for more information about the Finger Lakes - Lake Ontario Watershed Protection Alliance.

Finger Lakes-Lake Ontario Watershed Protection Alliance
 Kristy LaManche, Program Coordinator
 3105 NYS Route 3
 Fulton, NY 13069
 klamanche @ twcny.rr.com

