

New York's Great Lakes Basin Small Grants Program

New York Sea Grant



Photo by Heather Weitzner, New York Sea Grant



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New York Sea Grant (NYSG) in partnership with the New York State Department of Environmental Conservation (NYS DEC) created the New York's Great Lakes Basin Small Grants Program to support stakeholder-driven efforts to restore and revitalize the state's Great Lakes region and demonstrate successful application of **ecosystem-based management** (EBM). The Small Grants Program is made possible by the New York State Environmental Protection Fund and Article 14 of Environmental Conservation Law.

In July of 2014, New York State published an interim copy of New York's Great Lakes Basin Action Agenda, commonly referred to as the Great Lakes Action Agenda (GLAA), an action plan for the application of EBM principles in New York's Great Lakes basin. The document identifies pressing problems and actions which will benefit from holistic approaches needed to protect natural resources, environmental quality and economic development. The complete document may be found at www.dec.ny.gov/lands/91881.html.

The Small Grants Program supports local projects that lead to larger-scale activities described in the GLAA, and is anticipated to be available on an annual basis, depending on funding. Each year, new priorities may be identified, as sub-basin work group meetings identify regional and basin-wide collaborative actions needed.

New York's Sea Grant Extension Program provides Equal Program and Equal Employment Opportunities in association with Cornell Cooperative Extension, U.S. Department of Agriculture and U.S. Department of Commerce and cooperating County Cooperative Extension

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Current Projects

2015 – 2016 Small Grants Projects

The first year of funding focused on Goal #7 of the GLAA, to, “enhance community resiliency and ecosystem integrity through restoration, protection, and improved resource management.” Eleven proposals were submitted in response to the Request for Proposals (RFP). Of these projects, four were selected for funding beginning in 2015, and are as follows:

Improving Coastal Resilience and Community Stewardship on Grand Island – Buffalo Niagara Riverkeeper

The 11-mile stretch of coastline along the western portion of the Town of Grand Island is significant in that it is the most extensive length of protected shoreline along the Niagara River. Although the land is protected, it is currently experiencing degradation attributed to both natural and anthropogenic factors. Through this project, Buffalo Niagara Riverkeeper completed targeted outreach to community members and municipal officials in order to provide technical assistance and tools needed to improve shoreline health and coastal resiliency. Project work also involved efforts to advance a living shoreline demonstration project at a site experiencing erosion along the West River.



Shoreline and riverbank failure, Buffalo Niagara Riverkeeper, Summer 2015.

Wayne County Shoreline Resiliency Restoration and Protection of Sewer Resource Management for the Village of Sodus Point – Wayne County Soil and Water Conservation District

In the last four years the increase in high flow weather events, extreme wave action, and increased iced cover on shallow sandbar areas in the Village of Sodus Point has caused roughly 5-7 feet of bank erosion along five hundred feet of unprotected coastline with the rate of erosion of 1-2 feet per year. A sewer main that supports a third of the residents of the Village and four major trees in close proximity to utility lines were within approximately fifteen feet of the eroded bank. A roadway to a public beach was about twenty feet from the eroded bank. Using an ecosystem-based management approach, the Wayne County Soil and Water Conservation District implemented shoreline protection encompassing various textiles, riprap, and natural vegetation to provide deep root control of the shoreline. This will reduce vulnerability to flooding, drought, and other extreme weather events, mitigating potential sewer and infrastructure compromises.

North Pond Resiliency – Oswego County Soil and Water Conservation District

This project enhanced the resiliency of a coastal community in response to shoreline change affecting the North Pond Inlet and the coastal barrier between Lake Ontario and North Pond. Analysis of the inlet and coastal barrier system focused on: 1) long term change based on historical aerial photography and existing maps that precede available photography; 2) more recent shoreline changes based on available orthoimagery; and 3) potential topographic volumetric change based on LiDAR (Light Imaging, Detection and Ranging) data and prior topographic mapping data. Shoreline dynamics were then characterized with an assessment of the extent of sand mobilization and identification of areas of significant progressive change. Findings and recommendations applicable to ecosystem-based policies and inlet management planning were developed.

Seiche-induced Erosion in Lake Erie – Stony Brook University

Among the Great Lakes, Lake Erie is the fourth largest in surface area and the smallest in volume. Because of its shallow depth, Lake Erie demonstrates a unique free water level fluctuations pattern known as seiches, triggered by passing storms. The stronger the storms, the more pronounced seiche oscillations become, raising the water levels along the affected shore. The seiche itself, therefore, can be a source of coastal flooding and aggravate erosion in the Lake Erie coastal areas. This project evaluates the contribution of seiche and seiche-induced flooding and coastal erosion in New York State's Lake Erie coastal areas through numerical modeling efforts. The results of this study can potentially be generalized to the rest of the Lake Erie shoreline in other states.

2016-2017 Small Grants Projects



Rock on north shoreline of Seneca Lake, Lisa Cleckner 7/11/16.

The second year of Small Grant Program funding focused on Goals #2 and #7 of the GLAA, to, “control sediment, nutrient and pathogen loadings so that drinking water quality is protected, desired aquatic biotic communities flourish, humans and wildlife are protected from coastline health hazards, and natural processes are sustained” and to, “enhance community resiliency and ecosystem integrity through restoration, protection, and improved resource management.” Nineteen proposals were submitted in response to the Request for Proposals (RFP). Of these projects, nine were selected for funding beginning in 2016, and are as follows:

Green Infrastructure Collaboration for the City of Rochester and Monroe County – City of Rochester

The City of Rochester and Monroe County are increasingly using green infrastructure technology for public stormwater management redevelopment projects in their respective jurisdictions. Similarly, there is an emerging interest from the private sector and surrounding communities in the use of green infrastructure for stormwater management. As this trend gains momentum, it is important to proactively develop best management practices to guide the planning, design, implementation and maintenance of green infrastructure installations. Unfortunately this does not currently exist. This project seeks to develop a Green Infrastructure Design and Maintenance Manual to encourage and guide the proper use and installation of green infrastructure technologies with an emphasis on retrofit and redevelopment projects.



Collecting data, Joel Bernosky, 9/24/15.

The Community Rating System (CRS) Demonstration Project – Genesee/Finger Lakes Regional Planning Council

With the passage of the National Flood Insurance Act in 1968, the focus of disaster mitigation turned from flood control projects to nonstructural techniques such as land-use planning. The Community Rating System (CRS) program, which is a voluntary incentive-based program, rewards municipalities for exceeding the National Flood Insurance Program’s (NFIP) minimum standards, and uses nonstructural or “soft” mitigation measures to promote community resiliency and ecosystem integrity. The CRS Demonstration Project provides outreach and education to three communities in Wayne County to promote enrollment in the NFIP’s Community Rating System, which focuses on reducing and avoiding flood damage to insurable property, strengthening and supporting the insurance aspects of the NFIP, and fostering comprehensive floodplain management.

Analyzing Nutrient Fluxes Entering the Lower Great Lakes in Western New York – University at Buffalo

Despite management protocols to reduce pollutant discharge, harmful algal blooms (HABs) continue to occur in the Great Lakes. To protect human and aquatic ecosystem health, knowledge of both the timing and source of nutrient fluxes are needed. At present, little is known about nutrient fluxes from Western New York (WNY) tributaries, particularly during winter and spring. This project quantifies nutrient fluxes from representative WNY urban and agricultural subwatersheds to the Lower Great Lakes during winter and spring baseflow and storm conditions. This is the first critical step towards building a more comprehensive pollutant flux network for the Lower Great Lakes centered in WNY.

Wayne County Community Resource Management Planning for Shoreline Resiliency and Ecosystem Integrity for Port Bay’s East Barrier Bar on Lake Ontario – Wayne County Soil and Water Conservation District

Port Bay is connected to Lake Ontario by a small outlet through a barrier bar, which is important for pleasure boaters, aquatic spawning, anglers, safe refuge and emergency response vessels. The barrier bar provides a buffer between Lake Ontario and Port Bay, but wind and high water have reduced the bar to a fragile narrow barrier that is often breached by the wave action of Lake Ontario. This project

assesses, researches, and completes geographical, fisheries, and wildlife surveys to aid in the establishment of an action plan to restore Port Bay's East Barrier Bar, and to assess the route of engineering needs to implement this restoration project.

Riparian Restoration in the Onondaga Creek Watershed (NY): Combating the Impacts of Climate Change to Restore the Native Brook Trout – Onondaga Environmental Institute

Onondaga Creek is a major tributary to Onondaga Lake, and is part of the greater Lake Ontario watershed. In recent decades, the exotic brown trout (*Salmo trutta*) have become the predominant 'coldwater' species in the creek, due to its comparatively high tolerance to environmental perturbations, ability to outcompete native trout populations, and success and popularity of brown trout stocking programs. Recent research has shown water chemistry and canopy to be major drivers of fish community structure in Onondaga Creek, with many areas in the watershed lacking adequate riparian vegetation and habitat heterogeneity to adequately support coldwater species. This project enhances the resiliency, water quality and aquatic habitat value of Onondaga Creek by increasing riparian buffers, improving bank stability, and removing the invasive *Phragmites*, common reed.

Demonstration Project for Mitigating Nearshore Algal Production and Nutrients – Finger Lakes Institute

The fouling of beaches by decaying benthic algae is one of the most important nearshore water quality issues in the Great Lakes region, with a direct effect on coastline health. In the Finger Lakes of the Lake Ontario basin, residents have recently reported the presence of benthic algae and *Cladophora* in nearshore areas resulting in beach fouling, odors, and interference with recreational activities including swimming and boating. This project develops a water quality monitoring program that works with citizen scientists to determine levels and sources of nutrients and bacteria in the nearshore area of Cayuga Lake. This information will then inform a remediation project, targeting either wastewater treatment plants, septic systems, or non-point pollution sources such as agricultural runoff.



Collecting water samples, Chris Lowry, Winter 2016.

Smart Infrastructure to Support Adaptive Management of the St. Lawrence River – Clarkson University

Restrictive water level regulation in the St. Lawrence River over the past 50 years has had a profound impact on ecosystem health in both the river and its headwater, Lake Ontario. There is a critical need for sound scientific information to support policy decisions on changing water levels in this area. Such information is difficult to acquire in systems as large and seasonally hostile as the Great Lakes and their connecting channels. This project collects cost-effective year-round high resolution water quality data from sensors housed in power dams on the St. Lawrence River. These data will be used to establish linkages between water quality and water quantity (levels), a core element of an effective adaptive management strategy for water level regulation, and to communicate this information directly to the agencies and institutions responsible for adaptive management of lake levels.

CurrentCast – Center for Transformative Action

The need for conservation and protection is especially acute in Great Lake watersheds. These watersheds are part of the largest surface freshwater system in the world – a system that provides drinking water, recreation, irrigation, and transportation for tens of millions of people. Yet in areas such as New York’s Great Lakes basin, overdevelopment, coastal flooding, polluted runoff, and erosion are taking a toll. Through education and inspiration, CurrentCast aims to educate listeners about these issues and engage them in solutions. This project creates and distributes 20 CurrentCast (60-second syndicated radio series and podcast) segments that educate the public about issues and activities related to topics such as stormwater



Onondaga Creek, OEI, 4/8/16.

management, shoreline protection, flooding and erosion protection, riparian restoration, wetlands protection, and green infrastructure.

Owasco Lake Watershed Tributary Adoption and Identification Pilot Program (TAIPP) - Owasco Lake Watershed Inspection Program

Owasco Lake stretches 10.7 miles from north to south, and is the primary drinking water source for over 44,000 residents in central Cayuga County, including the City of Auburn and the Town of Owasco.

Stakeholders and agencies working throughout the watershed have identified specific challenges that negatively impact water quality, threaten the water supply, and impair public bathing and recreation activities. Stressors in both Owasco Lake and its tributaries include elevated levels of sediment, excessive nutrients, and public misunderstanding regarding water quality issues. The goal of the TAIPP project is to develop the Tributary Adoption and Identification Pilot Program resulting in simple, public-friendly information management tools focused on enhancing local public awareness, involvement, and understanding of watershed issues and concerns.

2017-2018 Small Grants Projects

The third year of funding focused on Goals #5 and #7 of the GLAA, to, “conserve and restore native fish and wildlife biodiversity and habitats to achieve and sustain resilient ecosystems and vibrant economies” and to, “enhance community resiliency and ecosystem integrity through restoration, protection, and improved resource management.” Twenty-one proposals were submitted in response to the Request for Proposals (RFP). Eight projects are anticipated to commence in 2017.

For further information about the Great Lakes Basin Small Grants Program, contact:
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New York Sea Grant is part of a nationwide network of 33 university-based programs working with coastal communities through the National Oceanic Atmospheric Administration (NOAA). Sea Grant research and outreach programs promote better understanding, conservation, and use of America’s coastal resources. Sea Grant is funded in New York through SUNY and Cornell University and federally through NOAA. More at: www.nyseagrant.org

