

Greenway Ecological Standing Committee
Greenway Ecological Fund (GEF) Projects Approved

Project Name & Description	Amount Approved	Sponsor
1. Niagara River Riparian Restoration Program This project is a three year pilot program that coordinates land stewardship trainings and ecological restoration projects with private residential landowners in the riparian areas of the Niagara River and its tributaries.	\$ 330,985.00	Buffalo Niagara Riverkeeper
2. Study: Muskellunge <i>Esox masquinongy</i> Genetic Structure, Reproductive Ecology, and Interaction with the Fish Community: Acquiring Information Needed for Successful Management This project was implemented with the objectives to: 1) Examine genetic population structure of muskellunge to identify discrete stocks and determine if spawning and nursery sites are equivalent; 2) estimate the effective number of breeding muskellunge from Young Of Year (YOY) genetic samples; 3) survey fish communities and YOY muskellunge production to monitor reproduction and identify priority areas for protection and habitat improvement, and ; 4) describe the diet of YOY muskellunge	\$ 148,617.00	SUNY College of Environmental Science and Forestry
3. Ecological Enhancement, Wetland Restoration, and Aquatic Habitat Restoration Project on Tuscarora Nation Land Within the Niagara River Greenway Corridor This project was initiated to restore aquatic/wetland habitat and enhancing ecological function and sustainability of Tuscarora Nation lands within a portion of the Niagara River Greenway Corridor along Gill Creek. Specifically, the project will involved creation of an open water-emergent, wetland-forested, wetland-upland mosaic for the purposes of re-establishing biological and structural diversity, native plant species, and ecological function to the project site, including the cultural tradition of a sustainable fishery.	\$ 197,199.00	Haudenosaunee Environmental Task Force
4. Outer Harbor Bell Slip Stabilization Project This project involved construction of a fortified stone embankment and trench to protect the Bell Slip from erosion damage.	\$ 55,000.00	Niagara Frontier Transportation Authority
5. Tree Regeneration at Tiftt Nature Preserve This project includes three major components: Habitat Enhancement, Environmental Education, and Research & Monitoring. This includes a major planting of tree seedlings to maintain the tree canopy in the 100 acres of woodlands on the preserve that provides valuable habitat for migrating songbirds and other wildlife. Other habitat enhancements include the planting of small trees and shrubs, protecting trees and seedlings from wildlife damage, enhancing soils with clean onsite wetland spoils, and controlling invasive species. Research on tree seedling survival and deer browsing was conducted through the construction of deer exclosures and research plots. Deer populations and the effectiveness of invasive species control techniques were also monitored.	\$ 300,000.00	Buffalo Museum of Science
6. Union Ship Canal Public Open Space (partially funded) The GESC funded the land-side native tree planting enhancement portion of BUDC's waterfront park project.	\$ 115,000.00	Buffalo Urban Development Corporation
7. Study: Regional Economic Growth through Ecological Restoration of the Niagara Gorge Rim This study focused on assessing the ecological and economic opportunities that could be realized along the Niagara gorge from the potential removal of the Robert Moses Parkway from Niagara Falls to Lewiston.	\$ 115,000.00	Niagara Falls & the River Region of Wild Ones Native Plant, Natural Landscaping

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<p>8. Enhancement of Bird Habitat, Environmental Education and Interpretation, and Ecotourism at Joseph Davis State Park, Town of Lewiston, NY; Phase I Location: Joseph Davis State Park.</p> <p>This Phase I project was for production of wildlife inventories, habitat planning and conduct of initial on-site management (primarily through invasive species control) at Joe Davis State Park.</p>	\$ 199,550.00	Buffalo Audubon Society
<p>9. Study: Evaluation of Nearshore Fish Assemblages, Habitat, and the Effects of Herbivorous Rudd (<i>Scardinius erythrophthalmus</i>): Determining the Efficacy of Fish Habitat Restoration Efforts in the Buffalo Harbor and Niagara River .</p> <p>This study conducted: (1) surveys of nearshore fish assemblages and aquatic vegetation near restoration sites, (2) a laboratory experiment investigating selection of aquatic plant species by rudd, and (3) a study determining which aquatic vegetation and physical conditions are associated with muskellunge spawning sites.</p>	\$ 188,881.00	SUNY College of Environmental Science and Forestry
<p>10. Niagara Greenway Regional Habitat Restoration Strategy and Niagara River Riparian Restoration Program - Phase I</p> <p>This project was conducted in two phases per GESC request. The first phase focused on defining biodiversity features and initiate viability assessments in order to provide a detailed process for defining measurable targets, priorities and actions needed for Niagara River ecosystem conservation, and for leveraging the federal, state and private funding that will be needed to implement them.</p>	\$ 137,785.00	Buffalo Niagara Riverkeeper
<p>11. Niagara Escarpment Legacy Project</p> <p>This project involved preparation of a comprehensive inventory of the ecological, geolocial, scenic, and cultural resources of the Escaropment in Niagara County; identification of areas of natural heritage significance; pinpointed opportunities to preserve, restore and enhance these resources; and provided a set of conservation and restoration priorities and recommendations.</p>	\$ 316,673.00	Western New York Land Conservancy
<p>12. Niagara Riparian Restoration Program - Phase II</p> <p>This Phase II project was an expansion of the original Phase I project, and involved identification, prioritization, planning and implementation of 5-8 riparian restoration and shoreline stabilization projects in the Niagara River Greenway corridor; implementation of a native seed collection and grow-out pilot project; implementing nine waster chestnut pull events in Tonawanda Creek; conduct program evaluation activities; and develop related website and informational materials. The project has resulted to date in the following living shoreline project construction implementations at: Sandy Beach, Ellicott Creek, Hyde Park Lake, Tifft Nature Preserve, North Tonawanda Botanical Garden.</p>	\$ 2,033,082.40	Buffalo Niagara Riverkeeper

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<p>13. Niagara Greenway Habitat Conservation Strategy – Phase II This follow-up phase (first phase originally titled Niagara Greenway Regional Habitat Restoration Strategy) was implemented to incorporate and apply emerging results from the first phase into the New York State Department of Environmental Conservation's Niagara River Remedial Action Plan (RAP), as well as to assist in the organizing, prioritizing and assessment of conservation opportunities supporting the Niagara River Greenway Plan's goal of restoration of the Niagara River ecosystem.</p>	\$ 370,000.00	Buffalo Niagara Riverkeeper
<p>14. Study: Quantifying Relationships Between Fish Assemblages and Nearshore Habitat Characteristics of the Niagara River This study was performed to develop models based on data collected throughout the upper Niagara River that can predict occurrence of fish species from site-level habitat characteristics. These models can be used to prioritize sites for protection and restoration, and to aid in making choices among alternative habitat enhancement designs.</p>	\$ 760,971.00	SUNY College of Environmental Science and Forestry
<p>15. Study: Investigating Lake Sturgeon Habitat Use, Feeding Ecology and Benthic Resource Availability in the Lower Niagara River This study was performed on the distribution, abundance and diversity of benthic forage resources in the lower Niagara River and their relation to lake sturgeon habitat use and feeding ecology. The study was done in support of developing management and conservation action plans, and supporting sustainable recreational use of the river.</p>	\$ 835,829.00	SUNY Buffalo State College
<p>16. Study: Emerald Shiner Habitat Conservation and Restoration Study in the Upper Niagara River: Importance for Sport Fish, Common Terns and Public Education This study examined various sites where shiners are found to catalog their features (percent vegetation, water velocity, depth, temperature, etc.); sampled shiner migration routes and habitats; and collected observational data of shiner schools.</p>	\$ 766,448.00	SUNY Buffalo State College
<p>17. Land Acquisition: Stella Niagara Preserve Partially through Greenway Ecological Standing Committee funding, the Western New York Land Conservancy purchased 29 acres of property located on the shores of the Niagara River. The objective of the acquisition was to open the property to public access, develop a walking trail system, provide new fishing, canoe and kayak access, place an entry kiosk, wayfinding and interpretive signage, restore 18 acres of grassland habitat, hold events and hikes there, and continue stewardship of the property.</p>	\$ 510,000.00	Western New York Land Conservancy
<p>18. Invasive Species Control and Native Planting & Park Beautification Project This project was partially funded, with funding limited to costs directly related to the removal and management of invasive species and to planting efforts at the Cazenovia Community Resource Center site on the Buffalo River.</p>	\$ 47,016.00	Cazenovia Community Resource Center and Library

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<p>19. Black Alder Removal at Buckhorn Island State Park and Beaver Island State Park GESC funding for the originally proposed project (Niagara River Birding Trail Site Evaluations and Niagara River Greenway Bird Habitat Restoration and Protection Projects at Buckhorn Island State Park and North Tonawanda Audubon Preserve) was limited to the removal of invasive Black alder at Buckhorn Island and Beaver Island.</p>	\$ 241,530.00	Buffalo Audubon Society
<p>20. Shoreline Restoration Final Design and Construction This project was a follow-up to the shoreline concept design component that was developed as part of the Invasive Species Control and Native Planting & Park Beautification Project. The follow-up work included final design and construction for the shoreline restoration at the Cazenovia Community Resource Center.</p>	\$ 122,538.00	Cazenovia Community Resource Center: Sail Buffalo
<p>21. Green Infrastructure & Native Landscape at Tiff Nature Preserve (partial) This project would be a component of a larger plan by the Buffalo Museum of Science to design and install green infrastructure features, improve access to the Tiff Nature Preserve Visitor Center, control invasive species and plant native landscaping, and expand interpretation of sustainable features of the facility. The GESC has committed \$30,000 toward the purchase of plants to be used in green infrastructure features and native landscaping, as well as funding for invasive species control.</p>	\$ 30,000.00	Buffalo Museum of Science
<p>22. Scajaquada Creek Ecosystem Restoration Within Forest Lawn Cemetery Working in partnership with Forest Lawn Heritage Foundation and Ducks Unlimited, Buffalo Niagara Riverkeeper restored an acre of emergent wetland within the footprint of the former Swan Lake complex, as part of a larger, separately funded effort to implement restoration opportunities along Scajaquada Creek within Forest Lawn Cemetery.</p>	\$ 261,226.00	Buffalo Niagara Riverkeeper
<p>23. Niagara Gorge and Rim Restoration and Enhancement This three-year project is the first phase of an effort, primarily through invasive removal and native tree planting, intended to restore and enhance wildlife habitat within 43 acres of New York Power Authority (NYPA) land in the Niagara River Gorge and Rim from the Niagara Falls Railroad Bridge to the Discovery Center. This includes riparian, grassland, and forest habitats critical to rare and declining plants and wildlife. The project site includes approximately 6,000 feet of shoreline along the Niagara River. The goals of this work are to increase the ecological health of the Niagara River Gorge and Rim, provide the conditions to allow native flora and fauna to flourish, and increase biological diversity of native flora and fauna, especially rare and declining species.</p>	\$ 996,000.00	Western New York Land Conservancy
<p>24. Invasive Species Removal in Forested Habitats at Buckhorn Island State Park The GESC-funded portion of this project is for the removal European Black Alder (<i>Alnus glutinosa</i>), Common Buckthorn (<i>Rhamnus cathartica</i>), Glossy Buckthorn (<i>R. frangula</i>), Autumn olive (<i>Elaeagnus umbellata</i>), European Privet (<i>Ligustrum vulgare</i>), Morrow and Tartarian honeysuckle (<i>Lonicera morrowii</i> and <i>L. tartarica</i>), Multiflora rose (<i>Rosa multiflora</i>) and other woody invasive species from 44 acres of forested wetland at Buckhorn Island State Park.</p>	\$ 185,000.00	Buffalo Audubon Society

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25. Vernal Pool Enhancement at Tiff Nature Preserve This project includes upland habitat enhancement (i.e., providing a buffer of upland forest habitat surrounding wetland depressions by invasive species removal and planting of native trees) and wetland depression enhancement to extend the hydroperiod of three vernal pools within a six-acre project area, in order to benefit Blue-spotted salamander and other vernal pool obligate species.	\$ 156,979.08	Buffalo Museum of Science
26. Land Acquisition: The Assumption Forest Preserve GESF funds were used to purchase an approximate 140-acre portion of a 157-acre property called Assumption Cemetery. The property, now known as the Margery Gallogly Nature Sanctuary, is open to low impact public access and include a trail system, a small parking area, place wayfinding and interpretive signage. Events and hikes will be held there. The Land Conservancy will also control invasive plant species, and will continue stewardship of the property into the future.	\$ 568,365.00	Western New York Land Conservancy
27. Osprey Nesting Platform and Migrator Habitat Enhancement Project This project was implemented to install a nest pole/platform for Osprey on the Buffalo State Great Lakes Field Station grounds, create stopover habitat on the Field Station grounds for migrating wildlife (birds and butterflies) and resident wildlife by installing multiple native trees and plantings, provide nesting hous for Purple Martins (<i>Proge subis</i>), and to use all of the habitat enhancements above to create experiential learning opportunities for local high school students as well as to provide outreach opportunities to the general community.	\$ 94,014.00	SUNY Buffalo State College
28. Pollinator Conservation Supplement, Niagara River Habitat Conservation Strategy This project involved the design, construction and installation of a pollinator Conservation Area on two specific sites in the Outer Harbor. Work involved site preparation, installation of planting materials, three years of maintenance and management, and signage installation.	\$ 105,000.00	Pollinator Conservation Association
29. Greenway Land Protection Program This project is to implement a new program to proactively protect ecologically valuable land on Grand Island within the Niagara River Greenway, to serve as a serve as a catalyst that will lead to hundreds if not thousands of acres of newly protected land on Grand Island. These newly protected lands will help promote tourism, enhance the environment, advance the economic revitalization of riverfront communities, and support the creation of a Greenway.	\$ 150,000.00	Western New York Land Conservancy

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<p>30. Niagara Gorge and Rim Restoration and Enhancement - Phase Two Phase Two of this program is to complete follow-up invasive species control activities along the Niagara River Gorge and Rim, one of the most ecologically diverse locations in the entire Great Lakes. This second phase of the project takes place over three years and is critical to ensuring the success of work completed during the first phase. Follow-up invasive species control in the same project area is necessary in order to ensure a positive long-term trajectory of native plant community recovery, to ensure the success of the initial work, and to avoid secondary invasion. Many of the invasive species treated in the first phase are likely to still be present, although in smaller numbers: seeds of these invasive species may remain in the seedbank and may remain viable for a couple of years, depending on the species; initial treatment of woody and herbaceous plants is never likely to be 100% effective; and new conditions, especially related to increased light from the removal of invasive tree canopy, can create conditions suitable to new non-native invasive species. The primary non-native invasive species at the site that have been and will be treated include: Norway maple, tree of heaven, garlic mustard, European black alder, common mugwort, Bohemian knotweed, Japanese barberry, oriental bittersweet, autumn olive, English ivy, European privet, Morrow's honeysuckle, Tartarian honeysuckle, purple loosestrife, common reed, common buckthorn, glossy buckthorn, black locust, and multiflora rose.</p>	\$ 949,598.00	Western New York Land Conservancy
<p>31. Invasive Plant Removal and Native Plant Conservation at Niagara University This project involves removal of invasive species in an area of old growth forest on Niagara University's campus and conserve a unique ecosystem that expands outward from the Niagara River Corridor. Invasive plants, such as common buckthorn (<i>Rhamnus cathartica</i>), glossy buckthorn (<i>Rhamnus frangula</i>), garlic mustard (<i>Alliaria petiolata</i>), and honeysuckle (<i>Lonicera spp.</i>), are being removed using mechanical and chemical means, and a three-year plan to assess and monitor progress is being implemented.</p>	\$ 48,900.00	Niagara University
<p>32. Mosquito Junction Swamp Restoration at Tiff Nature Preserve This project is being implemented to restore approximately 14 acres of the Tiff Nature Preserve known as Mosquito Junction to protect the adjacent marsh, maintain and improve quality bird habitat, and reestablish functional native plant communities. Restoration of Mosquito Junction will be accomplished primarily through treatment of woody vegetation on roughly six acres, reduction in cover of common reed in roughly five acres, and installing native plant material.</p>	\$ 387,647.00	Buffalo Museum of Science
<p>33. Habitat Restoration at Veteran's Memorial Park (Elmer's Pond) This project will focus on the creation of wetland, living shoreline, and upland pollinator habitat areas including expansion of Elmer's Pond, a waterbody within Veteran's Memorial Park, and enhancement of riparian habitat along the tributary that flows through the pond. The project area is centrally located within the park and is easily accessed from a nearby parking lot and paved sidewalk that follows along a portion of the shoreline.</p>	\$ 378,900.00	Buffalo Niagara Waterkeeper