

The Niagara River Riparian Restoration Program

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.

Final Report October 26, 2012



Table of contents:

I.	Executive Summary.....	3
II.	Riparian Restoration Projects.....	7
III.	Landowner Stewardship Training Program.....	10
IV.	Site Assessment Tours.....	13
V.	Development of Grant Proposals to Leverage Funding.....	14
VI.	Engaging Volunteers in Restoration.....	16
VII.	Budget: Proposed vs. Actual.....	18
VIII.	Press.....	20
IX.	Lessons Learned.....	21
X.	Appendices.....	25

I. Executive Summary

The Niagara River Riparian Restoration Program was generously supported by the Niagara River Greenway Commission with funds from the New York Power Authority.

In 2009, Buffalo Niagara Riverkeeper sought funding for the Niagara River Riparian Restoration Program, a three year pilot program to coordinate land stewardship trainings and ecological restoration projects with private residential landowners in the riparian areas of the Niagara River and its tributaries.

Urban and suburban landowners play an important role in Niagara River riparian restoration and protection. These residents who live along Niagara's streams, creeks, and the river itself have the opportunity to serve as stewards of the local environment, providing ecological restoration of their riparian lands and serving as models to others in the communities. While many riparian landowners appreciate their access to water and are interested in restoring the environment, they generally lack the knowledge, skills, funding, equipment, and technical assistance required to increase the ecological integrity of their property. To address this gap between willing landowners and the required resources for on-the-ground restoration, this program provided coordination with urban and suburban landowners and leveraged the skills and the existing resources of partners in conservation to increase riparian restoration activities in the watershed.

Deliverables for the three-year Niagara River Riparian Restoration Program as proposed were:

1. Up to 25 riparian restoration projects along the Niagara River and its tributaries with easements and/or long term maintenance agreements for each site;
2. A landowner stewardship training program including power points and a user-friendly Riparian Landowner Stewardship Guide;
3. A comprehensive website targeting the urban and suburban landowners that compliments the training program;
4. Five site assessment tours that educate landowners on potential enhancements to their property and to demonstrate to other landowners best practices;
5. Development of up to five grant proposals to leverage funding with other habitat restoration funding programs; and
6. Up to 250 volunteers engaged in restoration of the Niagara River's buffers.

The Niagara River Riparian Restoration program was developed by the Buffalo Niagara Riverkeeper in response to several planning initiatives, data analysis from the RIVERWATCH water quality monitoring program, and requests for assistance from landowners. Additionally, the program models best practices from similar private landowner restoration programs around the nation. The Niagara River Riparian

Restoration Program was designed to be a hybrid of such successful programs as those of the Re-Tree Western New York, Chesapeake Bay Foundation, the Potomac Conservancy, and others.

The project's implementation goals were two-fold: landowner stewardship education and training and the implementation of ecological restoration with partners with lead coordination by the Buffalo Niagara Riverkeeper. The Niagara River Riparian Restoration program had the following elements:

1) Outreach targeting private residential landowners. According to recent Buffalo Niagara Riverkeeper analysis of the watershed using Geographical Information Systems (GIS), residential land use accounts for approximately 24% of land within 1 mile of the river and of 0.5 miles of its tributaries. By targeting private riparian landowners, Riverkeeper intended to restore a significant portion of the shoreline.

2) Landowner stewardship hands-on training. A user-friendly riparian landowner's guide to shoreline stewardship and a workshop series were developed to educate all interested landowners in topic areas such as:

- Native plantings for attracting wildlife
- Vegetated armoring techniques for controlling erosion
- Stormwater management and using rain gardens
- Forest management
- Invasive species management and eradication
- Maintenance for forest buffers and other planting projects

Site tours, interpretive signage, and a website with resources, workshop materials, and case studies of the Niagara River Riparian Restoration program restoration projects were developed for disseminating information. Please see Section III for examples of the types of landowner stewardship outreach materials that were developed.

3) Sound ecological restoration projects. The Niagara River Riparian Restoration Program delivered to the landowner science-based, vegetated shoreline and ecological restoration techniques. Some of the projects are alternatives to traditional shoreline hardening techniques. See Section II for more details about the projects.

4) Targeted subwatersheds for restoration. Each planting season focused on different subwatersheds and Greenway municipalities. These included Cayuga Creek, Gill Creek, Ellicott Creek, Scajaquada Creek, Buffalo River, Tonawanda Creek, Upper Niagara River/ Grant Island, and the Lower Niagara River/Youngstown. The subwatershed approach allows for landowners to compare alternative shoreline stabilization models in site conditions similar to their own property.

5) Partnerships. The Niagara River Riparian Restoration Program is built upon the connections and strategic partnerships developed between the landowners, Riverkeeper, land trusts and other nongovernmental organizations, higher education,

and local, state, and federal government partners. Our partners included but were not limited to: Erie County Soil and Water Conservation District, Niagara County Soil and Water Conservation District, Erie County Department of Environment and Planning, United States Fish and Wildlife Service, Erie Community College, Buffalo Museum of Science, Buffalo Olmstead Parks Conservancy, Ecology and Environment Inc.

6) Landowner Commitment. Landowners were expected to provide: financial and/or in-kind services to the project, signage and/or ongoing access to site for educational and monitoring purposes, volunteer labor during installation, and ongoing maintenance of site.

7) Volunteer Engagement. A core component of the project implementation was the participation of community members through volunteering on planting day. Volunteers were recruited through the landowner as well as through Riverkeeper's network of friends and partners and a broadcast of appeal for help through various media. See Section VI for more details.

8) Rigorous site selection criteria. A prioritization scheme developed with assistance from partners was based on factors such as commitment to native-only plantings, prior community involvement of landowner, potential for up to 50 feet of forest buffer, ability to commit to long term land preservation and maintenance, potential for replication by other landowners, amount of acreage, cost effectiveness, presence of rare, threatened and endangered species, enhancement of unique habitats, and visibility of site within the community. The intention was to showcase a variety of project types to demonstrate the different techniques to shoreline stabilization and habitat creation.

9) Restoration and Maintenance Agreement. A written and signed agreement between Riverkeeper and the landowner was required prior to the construction of all restoration projects to clearly define the roles and responsibilities of each party. The agreement addressed but was not limited to: indemnification clause, maximum amount of cost-share, maintenance and repair of site, permitting if necessary, right of access, site ownership, terms and conditions if contract is breached or there is a transfer of ownership. Riverkeeper will maintain a relationship with the property owner and continue to provide technical assistance as needed for successful maintenance. Please see Appendix II-6 for an example of the maintenance agreement.

10.) Potential Development of Conservation Easements. As a long term outcome of the project, incentives and assistance for conservation easements on the restoration properties were suggested. The program encouraged and assisted in coordinating interested landowners with land trust partners to permit conservation of the riparian zone within the Niagara River watershed.

11) Evaluation and measurable objectives. Annual evaluation of metrics was integrated into the work plan of the project. The metrics included: acres of restored buffer, number of plants, number of volunteers, number of long term maintenance agreements or easements, maintenance practices, number of participants in landowner

training workshops, increase in the connectivity of riparian forest corridors, and results from surveys of landowners, funders, and partners regarding program satisfaction.

This program commenced in September 2009 under Riverkeeper's Citizen Action Team with Kerri Li as Program Director and Zeb Strickland as Watershed Restoration Project Manager (a description of this position can be found in Appendix I-1). In the fall of 2010, Strickland left Riverkeeper and was replaced by Riverkeeper staffer Larry Brooks. Each of the three years of the program, our Volunteer Coordinator position (a description of this position can be found in Appendix I-2) was staffed by a member of Western New York AmeriCorps and they were, in order, Bryan LoVullo, Emily McAndrews, and Matt Candeias. The program was effectively completed on September 15, 2012 with the last of the twenty-five demonstration plantings.

Larry Brooks
October 24, 2012

II. Riparian Restoration Projects

To meet our goal of planting twenty-five demonstration sites, we began to reach out and target landowners for participation in three ways:

1. A targeted mailing which included an introductory letter and application (Appendix II-1) to 990 waterfront landowners in the Greenway municipalities (this list can be furnished upon request). This list was generated mostly from assessment/tax roll information from the municipalities and also from the two Soil and Water Conservation Districts.
2. A press release sent to the major regional and smaller local newspapers (see Appendix II-2).
3. Zeb Strickland held a series of public presentations in various Greenway municipalities. He also handed out fliers (Appendix II-3). Over 60 applications came back.

Once the applications were received, Zeb Strickland made appointments to visit the sites and meet the landowners. During the site visits, he took photographs of the sites and filled out a pre-site assessment form (see Appendix II-4).

When a large number of site visits had been made, Strickland convened a site selection committee—comprised of James Sroka of the Erie County Soil and Water Conservation District, Victor DiGiacomo of the Niagara County Soil and Water Conservation District, Raymond Li of the U. S. Fish and Wildlife Service, and Kerri Li and Zeb Strickland of Riverkeeper. This committee evaluated applications for participation in the program according to a list of criteria (Appendix II-5). In the first round, 27 properties were considered and 11 accepted. Site solicitation and selection continued throughout 2011 and the first half of 2012.

Once selections were made, applicants received an acceptance letter (Appendix II-5a) or a decline letter (Appendix II-5b). Following soon after their acceptance, program participants were asked to sign a contract (Appendix II-6).

The original intentions were for these sites to be privately-owned residential properties maintained by committed landowners but due to a limited response to our appeal for participation, we chose to extend the program to other, publicly-owned sites, managed by entities with whom we had partnered in the past: for example, Ellicott Creek Park with Erie County's Department of Parks and Hyde Park Lake with the City of Niagara Falls. In all, seventeen of our sites are privately owned and eight are publicly owned.

Several landowners applied for the program and were under consideration for some time. For instance, the properties at 3699 Lower River Road, Youngstown, owned by Theodore and Hope Merletti, 1430 East River Road, Grand Island, owned by Carmen Laurendi, and also the property at 2192 River Road, Wheatfield, owned by Joe and Nanners Gargas, had been accepted to the program but were later disqualified. In the

case of the Merletti property, a planting plan was generated and live stakes were planted but, once underway, we realized that the majority of the area of the site, more than 90%, was hostile to further planting due to a severe slope and thick coverage by invasives too difficult to remove. A pre-planting site visit to the Laurendi property occurred shortly after a contractor had dug a trench to run an electric line from the house to the dock at the water's edge and revealed rock-hard clay under inches of grass, making a planting infeasible. The Gargas site was disqualified because, between 2011 and 2012, a retaining wall collapsed completely changing site conditions. Another site was under consideration—the Niagara River Yacht Club at 346 River Road, North Tonawanda. After spending some time planning solutions to the bank erosion at the site, we concluded that this project was well beyond the resources of this grant. Consequently, some program resources were expended on sites which did not reach fruition.

The complete list:

Table II.a NRRP Planting Schedule

Property	Planting Date	No. Volunteers needed
Seneca Bluffs, Buffalo	September 2009	30
Taylor Devices, N. Tona.	August 2010 actual	UW Day of Caring
Wallace, Grand Island	4/21/11 actual	10
Harbison, Grand Island	5/3/11 actual	22 UB students, 30 total
Duling, Youngstown	5/4/11 actual; replacement planting 9/19/12	Contractor
Forest Lawn Cemetery	5/14/11 actual 9/17/11 groundcover actual 6/15/12 actual	15 River Academy, 8 Forest Lawn, Buffalo Seminary, Villa Maria, UB
Ellicott Creek Park, City of Tonawanda.	5/27/11 actual, 4/26/12 actual (live stakes), 6/9/12 actual	22 Nixon Peabody, 24 Harkness, about 50 total; 10 SJCI on 6/9/12
Hoke, Niagara Falls	6/18/11 actual	5 United Health Care, 8 maximum
Eastern Park Canoe Launch, City of Tonawanda.	7/16/11 actual, 4/26/12 actual (live stakes), 5/25/12 actual	UW Family day of caring, 30; Nixon Peabody on 5/25/12
Longin, Wheatfield	9/3/11 actual	Holly H & UHC
Buffalo Scholastic Rowing Association	Knotweed cutbacks 6/16 & 8/3 & 8/4, spraying Sept. 28 & planting October 24th	10-15 rowers, Youth Works, Conservation Corps
China Light YC	9/13/11 actual	Club members
RCR Yachts	9/14/11 actual	RestoreCorps
McKinley H. S.	October 2011 actual	Students & teachers
Noonan, Youngstown	October 2011 actual	Contractor
Coykendall, Youngstown	October 2011 actual	Contractor
Winkler, Wheatfield	10/4/11 actual	8 RestoreCorps

Cayuga Creek, NF	10/8/11 actual, 5/5/12 actual	River Academy
Gillies, NF	5/8/12 actual	RestoreCorps
Praxair, Tonawanda.	5/18/12 actual	Employees & RestoreCorps
Fontana Boathouse	6/16/12 actual	Citibank & RestoreCorps
Woods Creek, GI Town Hall	9/4/12 actual	RestoreCorps & UB Law School students
Hyde Park lake, NF	9/15/12 actual	River Academy
First Presbyterian, Youngstown	Invasive removal Fall '11, June '12; planting Sept. '12 actual	Contractor
Scajaquada Path, Hoyt Lake, Delaware Park	8/15/12 actual, transplant 9/14/12	UW Day of Caring, Erie County DSS, transplant by contractor

For more detailed information about each project, please see Appendix II-7.

III. Landowner Stewardship Training



As part of our landowner stewardship training program, we created a Powerpoint presentation and arranged to invite the public to learn about this topic at meetings in several of the Greenway municipalities. Caring for Your Waterfront Property workshops were held per the following schedule:

Wednesday, 2/29/12 at 7:00 PM, Buffalo Niagara Riverkeeper Office, 1250 Niagara Street, Buffalo, NY 14213

Wednesday, 3/07/12 at 7:00 PM, Sheridan Parkside Auditorium, 169 Sheridan Parkside Drive, Tonawanda, NY 14150

Thursday, 3/08/12 at 7:00 PM, Niagara Falls City Hall, 745 Main Street, Niagara Falls, NY 14302

Thursday, 3/15/12 at 7:00 PM, Tonawanda City Hall, 200 Niagara Street, Tonawanda, NY 14150

Monday, 3/19/12 at 7:00 PM, Grand Island Memorial Library, 1715 Bedell Road, Grand Island, NY 14072

Wednesday, 3/21/12 at 7:00 PM, Wheatfield Community Center, 6812 Nash Road, Wheatfield, NY 14120

Thursday, 3/22/12 at 7:00 PM, North Tonawanda Public Library, 505 Meadow Drive, North Tonawanda, NY 14120

Saturday, 3/24/12 at 1:00 PM, Plantasia, The Fairgrounds Event Center and Expo Hall, 5820 South Park Avenue, Hamburg, NY 14075

Monday, 3/26/12 at 6:30 PM, Porter Town Hall, 3265 Creek Road, Youngstown, NY 14174

Thursday, 3/29/12 at 7:00 PM, Lewiston Town Hall, 1375 Ridge Road, Lewiston, NY 14092

Press releases were sent to the Buffalo News and Niagara Gazette (Appendix III-1) and more specialized, targeted by municipality (Appendix III-2), were sent to the local

papers such as the Bee Group, Niagara-Wheatfield Tribune, Grand Island Dispatch, and Lewiston-Porter Sentinel. Most notices appeared in print.

The following notice was sent out in Riverkeeper's March newsletter, *River Currents*. It was sent to 4401 email addresses, opened by 863 (19.89%), and 27 of those clicked on the link. Three days later, a special invitation (Appendix III-3) was sent to the RestoreCorps volunteer list, 233 emails, and 72 (31.17%) opened the message.



Waterfront Landowner Workshops

Waterfront land plays an enormous role in providing clean water for our communities and healthy habitat for wildlife. Thousands of species rely on these habitats to survive and many of them have a direct impact on our way of life here in Western New York. Volunteers who get involved in restoration projects along the water's edge have the unique opportunity to protect and improve the ecology of riparian lands and serve as models for their community.

Attend one of our workshops to learn about the many opportunities Riverkeeper has to offer for becoming a steward of our natural heritage. [View the list of workshops here.](#)

Workshop attendance totaled 58. Crowd size ranged from 16 at the Wheatfield presentation to zero at Riverkeeper offices and at the Tonawanda meeting.

We ordered three pounds of a custom seed mix (Deertongue grass, Partridge Pea, Golden Alexander, Tall White Beardtongue, Wild Sienna, Blue Vervain, Boneset, Common Milkweed, Wild Blue Lupine, New England Aster, Wild Bergamot, and Joe Pye Weed) for \$325.50 from Preferred Seed in Cheektowaga. From this, we made about 50 one-ounce seed packets which we handed out to our workshop attendees.

To complement our training program, Riverkeeper created a webpage for the program that contains information about riparian plantings in general and this program in particular. Links to program materials, such as our guides, and to other resources are included. The webpage can be found at: <http://bnriverkeeper.org/programs/habitat-restoration/habitat-restoration-projects/> .

Riverkeeper also created first-of-their-kind publications for Buffalo-Niagara, the *Native and Naturalized Plant Guide for Buffalo Niagara* (Appendix III-4) in June 2011 and the *Caring for Your Waterfront Property: A Stewardship Guide for Waterfront Property Owners* (Appendix III-5) in April 2012.

For about half of the sites, we created signs that explained the program and detailed what was planted at the site. We laminated the paper copy, put it in a galvanized metal

sign stand, and staked it in the ground at the site. For an example, please see Appendix III-6.

IV. Site Assessment Tours

The original deliverable was to conduct five site assessment tours that educate landowners on potential enhancements to their property and to demonstrate to other landowners best practices.

This is the deliverable that changed the most from our original intentions. We can consider all our visits to individual properties a site assessment during which we provided advice on best practices. Even for those landowners that we did not accept into the program, we provided advice or resources which enabled them to learn, on their own, what might be solutions to their properties. For example, John Puschick attended our workshop in Wheatfield on March 21, 2012. He came to us at the end of the presentation to tell us about his farm and his goal of planting a riparian buffer along a stream running through his property. Because of other commitments, we were unable to visit his property but we did correspond, through several emails, resources, such as USDA webpages on instructions for planting buffers on agricultural land, where he could follow up and learn on his own. He also received a copy of our “Caring for Your Waterfront Property” book. Later in the year, Mr. Puschick volunteered, through his company Citibank, to help us on one of our plantings, at Fontana Boathouse, on June 16, 2012.

One of the problems with touring completed planting sites was accessibility. All four plantings in Youngstown are on the bank of the lower Niagara and not visible from the road. (They do fit our criterion of public visibility as they are all visible to the public from the water.) A land tour would require crossing through the landowners’ property, infringing on their privacy, and requiring walking down and up steep stairs.

We did conduct a bus tour of some of our sites on August 25, 2011. Twenty-one attendees included landowners, members of the Greenway Ecological Standing Committee, RestoreCorps volunteers, and Riverkeeper board and staff.



V. Development of Grant Proposals to Leverage Funding

The grant proposals for other habitat restoration projects were:

1. Buffalo River Wetlands Restoration at Seneca Bluffs, \$200,000, from the U. S. Environmental Protection Agency under the Great Lakes Restoration Initiative. Buffalo Niagara Riverkeeper and its partner Erie County Department of Environment and Planning sought funding for wetland and riparian restoration at Seneca Bluffs Natural Habitat Area, located 500 ft upstream from the Buffalo River Area of Concern. The 11-acre Seneca Bluffs restoration will include management of wetland-associated upland for planting of native trees, shrubs and forbs of high wildlife value, long-term habitat quality monitoring, and invasive species control. This application was successful;
2. Reforestation in Two Western New York AOCs, \$397,396, from the U. S. Forestry Service under the Great Lakes Restoration Initiative. Riverkeeper is seeking funding to implement two high priority forested riparian habitat restoration projects totaling 18 acres and 3150 linear ft on Brownfield sites. The 6-acre RiverBend project will reduce toxics through phytoremediation. The 12-acre Griffon Park site will reduce stormwater runoff and improve a public access point adjacent to the historic Love Canal site. Community engagement will be achieved through the RestoreCorps volunteer program. This application was successful;
3. Niagara River Riparian Restoration Program Phase II, \$699,000 plus project costs, over three years, from the Niagara River Greenway Commission and New York Power Authority, to accomplish five objectives: Identify, prioritize, plan and implement 5-8 riparian restoration and shoreline stabilization projects for shoreline softening in Niagara River Greenway corridor; Implement the *Native Niagara: Ready! Set! Grow!* native seed collection and grow-out pilot project; Coordinate Nine Water Chestnut Pull events to assist in controlling the invasive species in Tonawanda Creek; Conduct a third-party evaluation of the NRRP program and coordinate the Niagara Greenway Graduate Internship program to support program evaluation and NRRP implementation; and Utilize the website and educational materials to provide waterfront landowners and stakeholders with technical information and profiles of the NRRP projects. This application was successful;
4. Buffalo River Invasive Species Management Initiative, \$1,204,000, from the National Fish and Wildlife Foundation – Sustain Our Great Lakes program. The project proposed to reduce and minimize the potential for downstream spread of aquatic invasive species within the Buffalo River AOC, contributing towards delisting three habitat-related beneficial use impairments. This application was unsuccessful;
5. Buffalo River Area Of Concern riparian habitat restoration at Dead Man's Creek/Ohio Street Inlet and Buffalo Color peninsula, \$1,294,452, NOAA

(National Oceanic and Atmospheric Administration), intended to restore 3,190 linear feet and approximately 6.5 acres of Buffalo River Area of Concern shoreline and urban upland riparian habitat, bringing the AOC 16% closer to delisting beneficial use impairment #14(1)(a), (b), and (c). This application was unsuccessful.

VI. Engaging Volunteers in Restoration



Perhaps the biggest success of the grant was the creation of a volunteer group which helped implement the plantings. Our initial goal was to have 250 volunteers participate. By the last planting, Hyde Park Lake in Niagara Falls, September 15, 2012, 540 different individuals spent 1,703.25 hours on our plantings. According to Independent Sector: (http://independentsector.org/volunteer_time?s=value%20of%20volunteer%20labor), the value of volunteer labor in 2011 was \$21.79 per hour. That would price the contribution of our volunteers to this project at \$37,118.82.

Some of the individuals participated at multiple locations and several times. Members of RestoreCorps were recruited through our website, <http://bnriverkeeper.org/get-involved/volunteer/restorecorps/> and our newsletters. We regularly sent email blasts to our email list reporting our accomplishments and inviting more volunteers. For examples, see Appendix VI-1.

Other than individual volunteers, we were also fortunate enough to have special groups—educational, corporate, religious, and other—request projects for their community service. Through the United Way, on their Day of Caring and their Family day of Caring, several corporate groups participated. Additionally, one firm, the Nixon Peabody Law Firm, contacted our organization independently and participated two years in a row. For a list of the groups that participated, please see Table II.a on page 8.

Riverkeeper took some photos of the planting activities and our volunteers also enthusiastically snapped photos. Photo albums of some of the plantings were posted on Flickr to share with all. They can be found here:

Taylor

<http://www.flickr.com/photos/bnriverkeeper/sets/72157624768036666/>

Wallace

<http://www.flickr.com/photos/bnriverkeeper/sets/72157626451028235/>

Harbison

<http://www.flickr.com/photos/bnriverkeeper/sets/72157626529486907/>

Forest Lawn

<http://www.flickr.com/photos/bnriverkeeper/sets/72157626741605800/>

Ellicott Creek

<http://www.flickr.com/photos/bnriverkeeper/sets/72157626782013437/>

Hoke

<http://www.flickr.com/photos/bnriverkeeper/sets/72157626912053533/>

Eastern Park

<http://www.flickr.com/photos/bnriverkeeper/sets/72157627115218085/>

Longin

<http://www.flickr.com/photos/bnriverkeeper/sets/72157627493583375/>

BSRA

<http://www.flickr.com/photos/bnriverkeeper/sets/72157626890981843/>

RCR

<http://www.flickr.com/photos/bnriverkeeper/sets/72157627713726804/>

Winkler

<http://www.flickr.com/photos/bnriverkeeper/sets/72157627746456347/>

Cayuga Creek

<http://www.flickr.com/photos/bnriverkeeper/sets/72157627815212249/>

An embroidered badge, same as pictured above, was special ordered as a premium for our volunteers. Select volunteers—ones who had participated in multiple events—were invited to special volunteer appreciation parties in 2011 and 2012.

VII. Budget: Proposed vs. Actual

The following spread sheet is a summary of the original funded budget found in our application compared with the actual amounts expended. There are variances for some of the line items (these were discussed prior with Stephen Schoenwiesner) and they are summarized below:

- Personnel Expenses—salary and fringe—originally budgeted at \$171,788. Actual expenditures at the end of the grant period amounted to \$174,559. This increase is due to new capabilities “in house” where Riverkeeper was able to perform some of the site design work that was expected to be contracted out under the contractual services line item.
- Contractual Services Expenses – originally budgeted at \$25,800. Actual expenditures at the end of the grant period amounted to \$19,500. This decrease is due to the “in house” site design work Riverkeeper was able to perform instead of contracting out services as well as Riverkeeper’s ability to solicit donations of plans that would have been bought through the contractors (see below).
- Supplies Expenses—plants, soil amendments, etc.—originally budgeted at \$58,440. Actual expenditures at the end of the grant period amounted to \$58,108. This decrease is due to Riverkeeper’s ability to solicit donations of plants (see below).
- Travel Expense – originally budgeted at \$760. Actual expenditures at the end of the grant period amounted to \$3,835. This increase is due to the underestimated amount of travel needed to fulfill the project than originally anticipated for employee mileage reimbursements and the use of Riverkeeper’s van for plantings.
- Printing and graphic design Expenses – originally budgeted at \$8,000. Actual expenditures at the end of the grant period amounted to \$8,786. This increase is due to the increased demand by citizens for more “Native Plant Guide” and “Caring for Your Waterfront Property” brochures.

In addition, Riverkeeper received the following donations to support this program:

- Plants donated from our River Academy program funded through the National Fish and Wildlife Foundation, a partnership with Re-Tree of Western New York, and the Niagara Beautification Committee’s tree farm at Hyde Park in Niagara Falls.
- Eleven planting plans for Erie County sites from Soil and Water Conservation District.
- Planting plans for The McKinley High School site from Marie Schrecengost of the U.S. Fish and Wildlife Service as part of her Outdoor Classroom program.

Please see spreadsheet on the next page.

Niagara River Riparian Restoration Program			
Budget vs. Actual			
Grant Budget		RIVERKEEPER Budget	
Category	Amount	Category	TOTAL RIVERKEEPER BUDGET
Personnel	\$148,992	Personnel	\$161,708.55
Fringe	\$22,796	Fringe	\$12,850.74
Contractual Services:		Contractual Services:	
Site Assessment/Design	\$10,800	Site Assessment/Design	\$4,500.00
AmeriCorps	\$15,000	AmeriCorps	\$14,999.58
Additional Tech/Supplies	\$58,440	Additional Tech/Supplies	\$58,107.71
Travel	\$760	Travel	\$3,835.16
Training Costs, Printing and Graphic Design	\$8,000	Training Costs, Printing and Graphic Design	\$8,786.26
Overhead	\$66,197	Overhead	\$66,197.00
Total	\$330,985	Total	\$330,985.00

VIII. Press

To reach out to the public and inform them of this program and to recruit both landowners and volunteers to participate, Riverkeeper attempted and succeeded in receiving notice in several media.

Early in the program, the first restoration project manager Zeb Strickland was interviewed on the radio. As an MP3 file, it cannot be included in this report but can be heard on the web from our website: <http://bnriverkeeper.org/programs/habitat-restoration/nrrrp/>.

The second project of the Habitat Restoration Program was finished on 08/18/2010 on Tonawanda Island in North Tonawanda. Television coverage of a press event can be found here: http://buffalo.ynn.com/content/top_stories/514607/buffalo-niagara-riverkeeper-receives-grant-to-restore-waterfront/ and the Buffalo News covered the press event also; the article is in the News archives here: <http://www.buffalonews.com/city/article105180.ece>.

Examples of print media coverage can be found in Appendices VIII-1 through VIII-9.

IX. Lessons Learned

The Greenway Ecological Standing Committee has asked us to share the lessons we have learned from this pilot program. They fall roughly into four areas:

Volunteer vs. Professional Labor

On the positive side, use of volunteer labor saved a great deal of grant funds that would have had to pay for professional services. This means that more money was available to spend on plants and other materials.

Another positive aspect of using volunteers is that they become citizen stewards of the environment, learning restoration techniques, implementing some of these on their own property, taking ownership for improving this community's watershed, and serving as ambassadors to the community, spreading the message. Many volunteers told us how rewarding their experience on our projects was for them. Several came back for more. Students used this experience as the subject for school projects.

On the negative side, one of the major difficulties in using volunteer labor for this project is that the volunteers, especially in groups, are available according to their schedule and not Riverkeeper's. For example, the United Way Day of Caring takes place in August of every year and August is not the best time for planting. Many volunteers are not available during weekdays unless they are participating through their employer's community service programs. Riverkeeper staff had to schedule several plantings on Saturdays in order to have help. The work day for volunteers is considerably shorter than it is for working persons, limiting a day's output. Follow-through is also a hit-or-miss affair—for many volunteers, the original planting was seen as the end of the project and they seldom committed to maintenance of the site afterward.

Another negative was the productivity of the workers. Many volunteers were new to landscaping activities and had to be taught proper planting techniques. This consumed some of the time of the Riverkeeper staff during each event. Even after some training, it was clear that they were putting fewer plants in the ground than experienced landscapers would.

The choice of volunteer versus professional labor depends heavily on program goals, on whether citizen participation is important. We feel that the development of this human capital, if you will, is as important as the development of environmental capital. The volunteers we have recruited and trained will have more of a positive impact on our watershed in the future.

Plant Survival Rates

Plant survival rates depend on three major factors: planting technique, maintenance, and herbivory. Quality of plant stock was not an issue as we had good suppliers who furnished quality stock.

- Planting technique: during our site surveys, we found indications, such as fissures in the ground, that planting had not been done properly in a small minority of cases. Where we saw that plants did not survive, in some cases it was clear that improper technique was the cause. We believe that some plant mortality is directly associated with the use of inexperienced volunteers (see above.)
- Maintenance: during the first season especially, watering is critical. The summer of 2012 was dry, about six inches below normal rainfall. At some of our sites, landowners had committed to watering their plants but, judging from the survival rates, had not done so according to our instructions. In other cases, where landowners could not do the watering on their own, Riverkeeper offered to help maintain these sites assisted by RestoreCorps. At sites where there were plantings in both the 2011 and 2012 planting seasons, the more established plants from 2011 fared better through the 2012 drought. In the picture below is a small cluster of plants. The green ones were planted in 2011, the brown ones planted May 2012.



- Herbivory: there were signs at less than half the sites of damage from deer and rabbits. At the end of the 2011 planting season, Riverkeeper staff and RestoreCorps volunteers installed deer protection at five sites. We installed 36-inch-high fencing secured with 4-foot wooden stakes and we sprayed organic Plantskydd[®] repellent

for deer and rabbits, “designed...to provide long lasting protection for up to 6 months.” At all sites where we used them, these measures failed to a partial or total degree. The deer ate our plants anyway. Fortunately, few were destroyed; in most cases the plants were just trimmed back and in 2012 showed new growth. Based on our experience in this project, herbivory should be expected when installing plants. Allocations should be made for replacement plantings, assuming at least 5% mortality due to herbivory.

Landowner Commitment

As mentioned above, some landowners did not water according to instructions. For the most part, however, results were very good. Landowners were not only invested in maintenance but took pride in their projects, referred neighbors and others to us for participation, and spoke highly of this program and of Riverkeeper.

Public Perceptions

Viewscape: One of the major challenges to proper riparian plantings on private property is the compromise between the best plants for the site and the landowners idea of viewscape. When recommending trees for one site, the landowner told me angrily, “People buy waterfront property for the *view*. The *view* is what makes it valuable.” [Emphasis his]. Even when patiently explaining how trees provide more environmental services than smaller, lower plants, landowners often prefer to protect their viewscape. At least two owners expressed a strong interest in cutting down their neighbor’s trees in order to protect their own viewscape.

Mown lawns: In all the interviews this author conducted for this program and for other outreach events for Riverkeeper, the overwhelming choice as optimal landscape option is the mown lawn. We address this in our presentations, showing a graphic of prairie grasses and plants next to one another, and to Kentucky Bluegrass. The contrast is stark—larger plants with larger leaf and root areas provide more of the beneficial services to the landowner and the environment at large but this perception is hard to change. Nonetheless, some of our audience remain unconvinced and the mown lawn remains the prevalent choice for landscaping plants.

Our conclusion is that all future restoration projects include public educational outreach addressing these specific topics.

Appendices