Emerald Shiner Habitat Conservation and Restoration Study in the Upper Niagara River: Importance for Sport Fish, Common Terns and Public Education

Buffalo Niagara RIVERKEEPER®
Sub-Contract -

Study Team Collaboration:
Habitat Group +
Education and Outreach Team

Progress Report
December 2015-November 2016

December 19, 2016
TASK 2
Participate in regular Study Team meetings held to achieve project objectives

TASK 3
Develop, share and implement materials and activities for education, interpretation and outreach in collaboration with the Study Team Education Specialist

A. Describe what progress you have made toward each of your grant objectives. Did you meet your goals for this period? Please be specific.

Task 2:

Buffalo Niagara Riverkeeper (BNR) has attended and participated in required Study Team and sub-committee meetings in order to achieve the project objectives. Meetings were held on 12/16/15 and 2/26/16 to discuss the coming years outreach schedule and future funding sources for continuing Emerald Shiner research.

Task 3:

Direct Public Outreach:
Rebecca Johnson, Study Team Education Specialist, continued to be part of the outreach team. Ms. Johnson and BNR worked in concert to complete multiple outreach events promoting the Emerald Shiner Project. Below is a list of events where Emerald Shiner Project Outreach has taken place:

2/13/16 BNR River Academy Lesson at BNR Office 12:00-4:30 pm
Rebecca Johnson presented to River Academy students about her background in Environmental Science and the value of science education. Ms. Johnson emphasized the necessity of Emerald Shiner outreach to support the research project. During this class a SUNY Buffalo State Community Academic Center representative presented about science literacy.

3/16/16 and 4/13/16 Outdoor Beat Show Interviews (2 hours for each person interviewed)
On 3/16/16, Joseph Gould, BNR Natural Resource Planner, and Chris Murawski, Director of Citizen Engagement, promoted the BNR Fish Forum and the Emerald Shiner Research Project on the show Outdoor Beat, which airs on Lockport
Community Television. The focus of the show hosted by, Bill Hilts Jr., is fishing, hunting, and general outdoor sports of western New York (WNY). *Outdoor Beat* also posted on social media about the forum and Emerald Shiners (see Appendix A).

The 4/13/16 show focused on the Emerald Shiner Research Project and interviewed Rebecca Johnson and Jake Cochran, SUNY Buffalo State graduate student. The host and guest speakers were passionate about the research in progress on a keystone prey species.

3/31/16 BNR Public Forum Series at Aquarium of Niagara 6:00-8:00 pm
As part of BNR’s Public Forum Series, the Aquarium of Niagara hosted a Fish Forum that highlighted fisheries research and outreach in WNY. A representative of the US Fish and Wildlife Service presented about Great Lake Sturgeon, a representative of BNR presented about fish passages and culverts, a representative of New York Sea Grant presented about invasive species, and Rebecca Johnson presented about the Emerald Shiners Research Project. The event reached full capacity with 100 audience members and had a waiting list. Everyone in attendance was issued Emerald Shiner Flyers. There was a broad range of ages and fisheries backgrounds represented by the audience.

4/22/16 BNR Spring Shoreline Sweep 10:00 am-2:00 pm
The largest single day cleanup in WNY is hosted each spring by BNR at 40 sites around the Niagara River watershed. The experience gained from participating in the cleanup allows the community to be aware of the extent of litter pollution affecting our waters. After 2 hours, over 10 tons of litter from the shoreline was collected. Many of the cleanup sites were near Combined Sewer Overflows (CSO) and in urban areas that neighbored Emerald Shiner habitat. After the cleanup, volunteers convened at a Volunteer Appreciation party where BNR provided outreach materials on all of our projects, including Emerald Shiner Flyers.

6/7/16, 7/19/16, and 8/9/16 Buffalo Places’ Downtown Country Market 10:00 am – 1:00 pm
In the middle of the City of Buffalo’s business district, less than a mile away from Emerald Shiner habitat, Buffalo Place hosted a farmers market. BNR was invited to host a booth and to do direct outreach about our work. Those that visited the market were a mixture of city residents and local employees on lunch break. A few of the patrons that visited had the hobby of fishing and were interested in the Emerald Shiners. Many more of the visitors were interested in kayak tours including the Niagara River fisheries themed tours.
6/14/16, 7/28/16, 8/8/16 (2), 8/10/16 BNR River Tour Hyde Park Birding 2 hours for each tour
BNR American Canoe Association Certified Kayak Instructors, Chris Murawski, Wendy Paterson, and Jarrett Steffen, gave tours to 87 people of Hyde Park Lake, over 4 events. Hyde Park was a great place to introduce people to water sports and bird species of the Niagara River corridor. Gill Creek is a Niagara River Tributary that flows into the Niagara River Area of Concern and also is damned to create a lake in Hyde Park. Tour participants learned basic kayaking skills and discussed the importance of water protection for bird populations including the impacts of water pollution on prey fish. See Appendix B for social media post examples.

6/16/16, 7/12/16, 7/16/16, & 8/25/16 BNR River Tour Niagara River Islands 6:00 – 8:00 pm
BNR’s Niagara River Islands Tours launched from East River Marsh on Grand Island and focused on the importance of islands to fish populations. Thirty tour participants learned about the restoration of East River Marsh, Strawberry Island, and Motor Island. Bird species dependent on minnow populations were also observed. See Appendix B for social media post examples.

6/23/16, 7/16/16, 8/11/16, 8/18/16, 8/23/16 BNR River Tour from Little Niagara River 2 hours per tour
Griffon Park Kayak Launch in Niagara Falls was a little known way to access Emerald Shiner Habitat. Over 5 tours, BNR took 78 tour participants on Little Niagara River, Niagara River, and Cayuga Creek to learn about the flora and fauna of the region, basic paddling skills, and the environmental impact of the region’s development choices. Participants included inner-city high school students, local community development planners, and families. All participants were impressed by the diversity of organisms observed.

6/25/16-6/26/16 Buffalo United Front’s Family Fishing Day at Broderick Park 7:00 am -7:00 pm
Family Fishing Day, a 2 day event run by Buffalo United Front, is an opportunity to fish in New York State without a permit. The event, hosted at Broderick Park, attracts hundreds of people that are both experienced and inexperienced with fishing in the Niagara River. Broderick Park is adjacent to multiple sampling sites of the Emerald Shiner Research Project. This year, 4 BNR outreach contractors and interns conducted direct outreach with 231 people, raised awareness about the importance of Emerald Shiners to local birds and sport fish, and discussed fish consumption.
6/25/16, 7/23/16, 8/27/16, 9/24/16, 10/29/16 Monthly Cleanups at Gratwick Park, Times Beach (2), Unity Island (2), Black Rock Canal Park, Tow Path Park, Broderick Park, & Scajaquada Creek 10:00 am- 12:00 pm
BNR’s Monthly Waterway cleanups increased awareness of pollution prevention. BNR hosted 9 cleanups with a total of 215 volunteers at sites on the shores of Niagara River. Litter collected from these locations directly impacted Emerald Shiner habitat. At three of the cleanups, Michael Gesel of the Buffalo Aqua Club, dove into Niagara River using SCUBA equipment to remove over 1,200 lbs of waste. Volunteers were astonished by the amount of litter in the water. During the events the SCUBA diver attracted people who were fishing for minnows and anglers to talk with us about the project. All of the cleanup sites were the only buffer between urban areas and the water. Volunteers from these events registered for the BNR eNewsletter and are likely to continue to be advocates for water protection and fisheries research.

7/5/16 BNR’s Young Environmental Leaders Program Class Paddle at SUNY Buffalo State Great Lakes Center 3:30 pm – 6:30 pm
Buffalo Public High School students were lead by BNR kayak Instructor on a paddle tour of Black Rock Canal. Before the 20 students launched from the SUNY Buffalo State Great Lakes Center, instructor Chris Murawski lead an activity about the Lake Erie food web, then Rebecca Johnson presented about the Emerald Shiner’s role in the food web. On the kayak tour, the students observed regional flora and fauna including the predation of an Emerald Shiner by a common tern.

7/7/16, 7/21/16, & 7/22/16 BNR Boat Stewards Outreach at Buffalo Outer Harbor State Park, Black Rock Canal Park, & Niawanda Park for a total of 13.5 hours
Rebecca Johnson and Morgan Zyzick, a SUNY Buffalo State undergraduate intern, joined BNR Outreach Contractors at boat launches along Niagara River to educate boaters on the impacts of invasive species and distribute Emerald Shiner Flyers. Flyers were distributed and emerald shiner research was discussed with 55 boaters.

7/17/16-7/24/16 BNR Angler and Boater Outreach at Canal Fest of the Tonawandas at the Erie Canal 8:00 am – 5:00 pm
James Rice, a contractor for BNR, focused on fish consumption outreach and lead a group of interns do direct outreach. Beside fish consumption, patrons learned about invasive species and Niagara River fisheries. Emerald Shiner Flyers were distributed.

7/26/16 & 8/17/16 BNR Cleanup with Workgroups at Scajaquada 3 hours for each cleanup
Twice this summer BNR hosted volunteer days for work groups at the mouth of a Niagara River tributary: Scajaquada Creek. Over 50 staff members from local
businesses donated their time to removing furniture, hypodermic needles, tires, and other waste from the shoreline. Over 2.25 tons of trash was removed at these 2 events. 94,000 people live within the Scajaquada Creek watershed and the creek flows into the Black Rock Canal near a sampling site for Emerald shiners. Emerald Shiner Flyers were distributed to at least half of the volunteers; the events stimulated donations to BNR and started ongoing volunteer relationships.

7/30/16 Paddles Up Niagara by Niagara River Greenway at Beaver Island State Park
7:00 am – 2:00pm
Paddles Up Niagara is an annual event hosted by Niagara River Greenway to celebrate watersports on Niagara River. BNR lead an outreach booth and provided kayaks for individuals to join the Fun Paddle. Emerald Shiner Flyers were distributed and BNR rented kayaks to 5 people.

8/11/16 BNR Niagara River Fisheries River Tour from the SUNY Buffalo State Great Lakes Center 6:00 pm – 8:00 pm
As part of the BNR River Tour Program, Rebecca Johnson guest lectured while BNR staff guided a kayak tour, with six guests, in the Black Rock Canal. Many participants were pleased to explore a body of water they had never had a chance to access and started following the Emerald Shiner Research Project Facebook page after the tour.

8/31/16, 9/14/16, 9/21/16, & 11/16/16 BNR River Academy Introductory, Aquatic Monitoring, Green Infrastructure and Water Quality, & River Art and Spirit Classes 4:30 pm – 6:20 pm
During the Fall 2016 semester of BNR’s River Academy, four lessons discussed Emerald Shiners and their habitat. Robbyn Drake, BNR Director of Education and Training, and Lisa Matthies-Wiza, Erie County Dept. of Environment and Planning, were the professors for the Fall 2016 semester. There were 20 students registered for the course and guest speakers included: Elizabeth Robbe (BNR), Wendy Paterson (BNR), Dave Conti (N. Tonawanda Environmental Committee), Chris Murawski (BNR), and Susan Kornacki (BNR). Classes were located at East Hill Foundation in North Tonawanda, Burchfield Nature and Art Center in West Seneca, and Riverside-Salem on Grand Island. As an extra credit project student, Brittany Robinson, created an art piece modeling Emerald Shiner habitat (see Appendix C below).

9/22/16 Niagara Falls USA Visitor Center 10:00am-2:00pm
Ron Zietz, BNR Community Engagement Intern, and Wendy Paterson, BNR Community Liaison, hosted an outreach booth at the Niagara Falls USA Visitor Center. Only 5 Emerald Shiner Flyers were distributed.
9/24/16-9/25/16 New York Power Authority Wildlife Festival at the Power Vista 9:00 am – 5:00 pm
Elizabeth Robbe, BNR’s Water Quality Specialist, Ron Zietz, and students from Young Environmental Leaders Program hosted an outreach booth at the Wildlife Festival. They focused on the impacts of CSOs and litter on Niagara River. They also discussed pollution prevention and fish of Niagara River. They distributed about 30 Emerald Shiner Flyers. Many families that attended the event were unaware of BNR and Emerald Shiners.

10/8/16 New York Earth Science Day at Penn Dixie Paleontological and Earth Science Center 9:00 am – 3:00 pm
Darius Huggins, BNR Community Engagement Intern, and Elizabeth Robbe did direct outreach at Penn Dixie Paleontological and Earth Science Center’s Earth Science Day. They focused on water quality monitoring, water pollution, and their impacts on Emerald Shiners. Ms. Robbe created the Emerald Shiner Coloring Sheet in Appendix D below and handed out Emerald Shiner Flyers. Over 30 families enjoyed learning more about Emerald Shiners and took the handouts.

Materials Created this year for outreach:
BNR continued to use the existing outreach materials created in prior years.

B. What challenges have you encountered? How are you addressing these challenges?

Due to weather, the first Emerald Shiner River Tour was canceled, and it had to be rescheduled. The group that could make it to the rescheduled date was interested and inquisitive but the audience could have been larger with greater advertising support. The number of event guests and boaters reached was also variable based on weather and location.

C. Are you on schedule to complete your project in the proposed timeline? If not, please explain why you are ahead or behind schedule.

It was completed on schedule.

D. Please describe the level of your efforts within the budget expended to date. Was there in-kind support from other resources?
In-kind funding was used to support outreach efforts; totaling 212 hours of BNR staff time from 5 different funding sources.

E. What progress toward your objectives do you expect to make before your next status report? Please be specific.

Although this year’s end marks the conclusion of BNR’s contractual agreement with SUNY Buffalo State, we will continue to incorporate materials and information regarding the emerald shiners into all scheduled outreach and education events in 2017. BNR will present at the Greater Niagara Fishing and Outdoor Expo in Niagara Falls, conduct direct outreach at Buffalo United Front’s Family Fishing Day in Buffalo, post about the emerald shiner on social media, and teach about the Niagara River fisheries as part of BNR’s Water Academy and YELP classes. BNR gained significant institutional knowledge from the work done on the project and will continue to benefit from the outreach materials created from this program well beyond the conclusion of the formal contract.
Appendices:

Appendix A Outdoor Beat Television show:

Chris Murawski and Joe Sauli were a wealth of knowledge for Buffalo Niagara Riverkeeper on yesterday’s Beat. The Fish Forum at the Aquarium of Niagara Falls was sold out on March 31, but they found 10 more seats to fill. Check out www.BNRiverkeeper.org for details and to register.
Outdoor Beat

April 12 · 01

This week’s show at 4 pm Wednesday will be with R. Josephine Johnson, Emerald Shiner Project Outreach Specialist with the Great Lakes Ecosystems at Buffalo State. She will be on with Jake Coshman, Graduate Student and our discussion will focus on this important baitfish. It should be a great show, giving some insight into the lower end of the food chain in our local waters.
Appendix C Social Media Posts:
Appendix D River Academy Art Project:  
Project summary written by Brittany Robinson:  
“My homage to the emerald shiner!  

I was really excited when you mentioned using the shiner for our art projects. Over the summer I had a really [nice] experience with the little guys. I was with my grandma and her friend Rosie and we were swimming in the Niagara River[…]

I started reading about them and from what I learned, plus my neat experience with them [...], I now have a new appreciation for the little shine guys!  
Materials I used:
-the shiners are made from recycled tin foil from my family's thanksgiving dinner.  
-the "seaweed" is actually locust pods that I found at Burchfield a few years ago, I had been saving them for an art project and thought they were perfect for this!  
-the river rocks are from buffalo creek, where it runs behind my house  
-the algae/seafloor sand is actually stuff that's used to make model train layouts  
-and the Styrofoam, I found at my aunt's house, it was about to get thrown out and I'm glad I spotted it cause I wanted to make the project without using any kind of harsh glues or anything (although I did use some sprayed Elmer's glue for the "sand" to stay on, and a little wood glue for the rocks and Moss to stay in place”
Appendix D Emerald Shiner Coloring Sheet:

THE EMERALD SHINER

The emerald shiner (*Notropis atherinoides*) is a small, silvery minnow species native to the Niagara River. They eat small insects and zooplankton. The emerald shiner is an important food source for larger fish, like walleye, bass and perch. Many birds like the common tern, gulls, and mergansers eat the emerald shiner. People like to catch this minnow to use as a baitfish.

Decorate your own emerald shiners below!