BUFFALO NIAGARA RIVERKEEPER®

Riverwatch

2016 Water Quality Report

Riverwatch 2016

Water Quality Report

Elizabeth Robbe (left)
Water Quality Specialist
&
Wendy Paterson (right)
Community Liaison

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For more information:
bnriverkeeper.org/riverwatch

Contact about volunteering:
Wendy Paterson
Community Liaison
wpaterson@bnriverkeeper.org
(716) 852-7483 ext 26

Contact about data:
Elizabeth Robbe
Water Quality Specialist
erobbe@bnriverkeeper.org
(716) 852-7483 ext 23

Dear Citizen,

Thank you for reading the 2016 Riverwatch Water Quality Report! With water in news headlines nationwide our attention should now, more than ever, be focused on Western New York's most vital natural resource - fresh water. This report contains insightful information about the water quality in our region and our hope is that you can use it as an educational tool.

With 2016 being our first year overseeing the Riverwatch Volunteer Water Quality Monitoring Program, we cannot thank our volunteers enough! Over 50 people participated and their commitment was outstanding. These volunteers are trained and form teams which monitor numerous sites on the Niagara River and its major tributaries once a month from April through November. Volunteers collect general water quality parameters including dissolved oxygen, pH, conductivity, and turbidity. This report displays the results of their efforts by comparing data to state water quality standards, giving each site a letter grade, and comparing with data collected from previous seasons.

This report also displays the findings from our Young Environmental Leaders Program summer mentorship. Riverkeeper staff worked with five Buffalo Public High School students and their teachers to complete a multi-faceted project involving water quality sampling and cleaning up shoreline trash.

Community engagement programs, including Riverwatch, have been the cornerstone of Buffalo Niagara Riverkeeper since its foundation. We have been credited for propelling a community-wide attitude shift towards water protection, and in 2016 we were awarded the Thiess International River Prize as recognition for our collaborative method of revitalizing the Niagara River Watershed! This is a prestigious award, presented by the International River Foundation to organizations demonstrating outstanding results in sustainable river basin management, restoration, and protection. Our work in the Niagara River Watershed would not be possible without the support of the community and our volunteers!

Sincerely,

Wendy Paterson
Community Liaison

Elizabeth Robbe
Water Quality Specialist

Front Cover Image:
Bev Seyler

Back Cover Image:
Ron Zeitz

"Funding provided by the NYS Pollution Prevention Institute through a grant from the Environmental Protection Fund as administered by the New York State Department of Environmental Conservation"

"Any opinions, findings, conclusions or recommendations expressed are those of the author(s) and do not necessarily reflect the views of New York State Pollution Prevention Institute or the Department of Environmental Conservation"

This report summarizes our testing results in two different ways:

1. Water Quality Standards

Comparison to State Water Quality Standards created by the New York State Department of Environmental Conservation (NYSDEC) under the Clean Water Act (CWA)[1]

The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters.

Our State Environmental Agency, the NYSDEC, establishes water quality standards, authorized by the CWA with the United States Environmental Protection Agencies oversight. These standards may be narrative or numeric. Guidance values are created when no present standard exists.[2]

Here are the standards for the parameters we test[3]:

Parameter	Standard
Dissolved Oxygen	No less than 6.0 mg/L for Niagara River No less than 4.0 mg/L for all other streams
Conductivity[4]	Between 150 and 500 ùs/cm
pH	Between 6.5 and 8.5
Turbidity	No more than 5.0 NTU

New York State waterways are assigned a letter classification that denotes their Best Uses by the NYSDEC. Evaluations occur on a five year cycle to determine whether waterbodies are meeting their best uses. These evaluations include water quality sampling and comparing results to set standards.

Stream Classes and Their Best Uses

A **Special.** A source of water supply for drinking, culinary or food processing purposes; primary and secondary contact recreation; and fishing. These waters shall be suitable for fish, shellfish, and wildlife propagation and survival.

B **Primary and secondary contact recreation and fishing.** These waters shall be suitable for swimming and other contact recreation as well as fish, shellfish, and wildlife propagation and survival.

C **Fishing.** These waters shall be suitable for fish, shellfish, and wildlife propagation and survival as well as primary and secondary contact recreation, although other factors may limit the use for these purposes.

D **Fishing.** These waters, which reflect the lowest classification standard, shall be suitable for fish, shellfish, and wildlife survival. The water shall be suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes.

2. Water Quality Index

Giving each point a numerical and letter grade using a Water Qulity Index (WQI)

A Water Quality Index provides a single number that expresses overall water quality at a certain location and time period based on multiple water quality parameters. The objective of an index is to turn complex water quality data into information that is understandable and useable by the public. Riverkeeper developed a WQI based on the National Sanitation Foundation's WQI.

1. Each parameter was given a weight based on how influential they are on determining water quality.

Parameter	Weight
Dissolved Oxygen	.24
Conductivity (TDS)	.20
Turbidity	.20
pH	.18
ΔT[5]	.18
Total	**1.0**

2. The average seasonal value for each parameter was calculated for each site and plugged into equations created by the NSF[6] which yielded a number known as a Q value.

3. Q values for each parameter were multiplied by the weighting factor and added together to get the WQI number grade out of 100 for each site.

Example: Reservoir Park

(97 *0.24) + (64*0.20) + (84*0.20) + (78*0.18) + (88*0.18) = 83

DO Cond. Turb. pH Δ T Total

4. WQI values were then given a grade A through F based on the following scale:

A = 90-100 **B** =80-89 **C** =70-79 **D** =60-69 **F** = 59 and below

Reservoir Park Total = 83
Reservoir Park would get a B grade

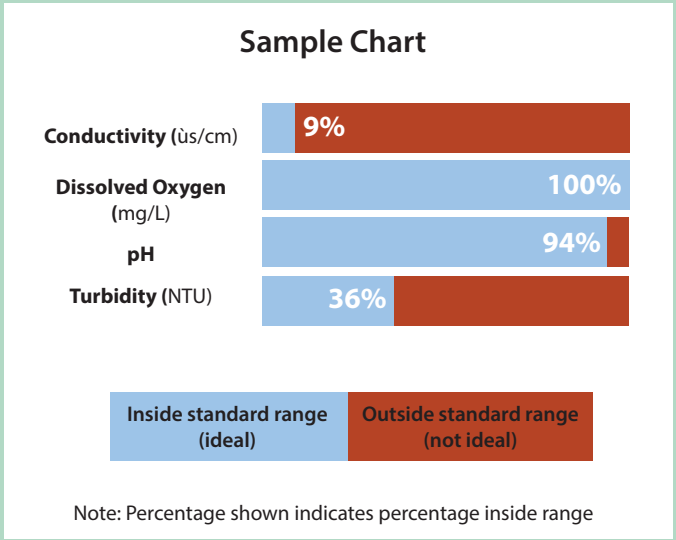
Dissolved Oxygen, Conductivity, Temperature, and pH is sampled using a YSI Pro Plus equipped with a quatro cable.

Turbidity is sampled using a HACH 2100 Q Turbidimeter.

1 33 U.S.C. §1251 et seq. (1972)
2 Part 703: Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations (Statutory authority: Environmental Conservation Law, §§ 3-0301[2][m], 15-0313, 17-0301, 17-0809)
3 Part 701: Classifications-Surface Waters and Groundwaters (Statutory authority: Environmental Conservation Law, §§ 1-0101, 3-0301 [2][m],15-0313, 17-0101, 17-0301, 17-0303, 17-0809)
4 US Environmental Protection Agency's Water: Monitoring and Assessment 5.9 Conductivity
5 ΔT refers to the change in temperature of one sample location to the average temperature of other sample locations in the same waterbody. Example: location 1 lacks shading from riparian vegetation and records a higher water temperature than location 2, which has abundant vegetation and shading. There would be a large ΔT between these two locations.
6 Oram, Brian B.F. Environmental Consultants Inc. (2013 January 20). Monitoring the Quality of Surfacewaters. Retrieved from http://www.water-research.net/index.php/water-treatment/water-monitoring/monitoring-the-quality-of-surfacewaters

1. Water Quality Standards

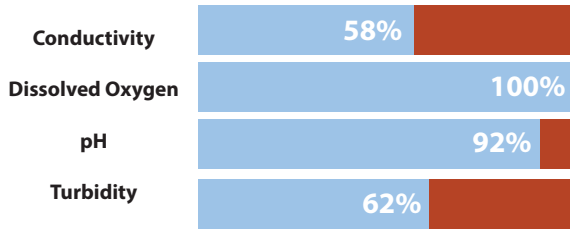
For each waterbody sampled, a bar graph was created presenting the total percentage of samples which fell inside the standard range for that parameter.



Water Quality Issues are referenced from NYSDEC's Waterbody Inventory/Priority Waterbodies List (WI/PWL) which can be viewed here:
http://www.dec.ny.gov/chemical/36738.html

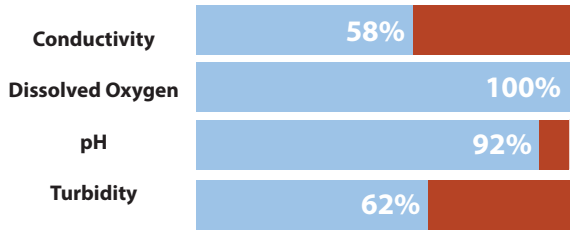
Buffalo Creek

Stream Class: Lower Stretch - B (From mouth to East Elma)
Upper Stretch - A (From East Elma and above)
Stream Length: Lower Strech - 63.5 miles; Upper Stretch - 285.1 miles
Water Quality Issues: Aquatic life and recreation in the lower stretch are stressed by silt/sediment pollution from stream bank erosion and urban stormwater runoff. Agriculture is a suspected pollutant source. There are no known impacts listed for the upper stretch.



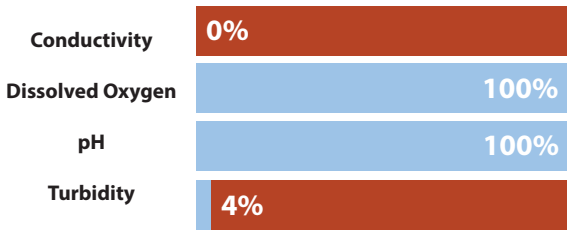
Cazenovia Creek

Stream Class: B
Stream Length: 51.7 miles
Water Quality Issues: Public bathing and recreation are stressed while aquatic life is threatened by known sources of pathogens and suspected urban stormwater runoff.



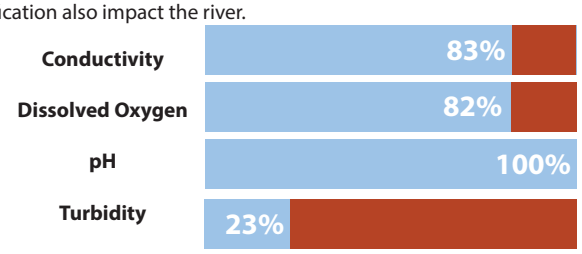
Ransom Creek

Stream Class: C
Stream Length: 93.7 miles (includes Got Creek)
Water Quality Issues: Aquatic life and recreation are impaired by residential sewage discharges from on-site septic systems resulting in low dissolved oxygen and excess pathogens.



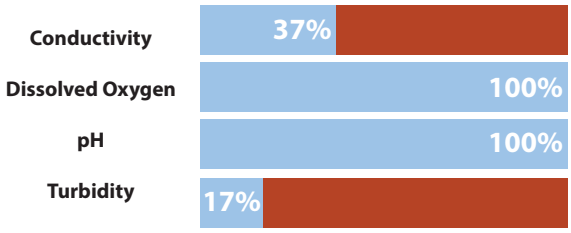
Buffalo River

Stream Class: C
Stream Length: 8.6 miles (from mouth to Cayuga Creek)
Water Quality Issues: The main stem of the river is designated as a Great Lakes Area of Concern (AOC). Fish consumption is precluded while aquatic life and recreation remain stressed. Combined sewer overflows, stormwater runoff, sediment contamination, inactive hazardous waste sites, and hydrologic modification also impact the river.



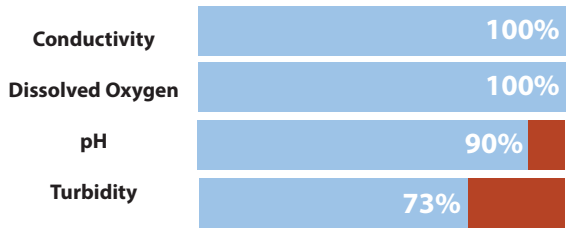
Tonawanda Creek (Middle Main Stem)

Stream Class: C
Stream Length: 11.7 miles (from East Pembroke to Batavia)
Water Quality Issues: Aquatic life and recreation are impaired by elevated nutrient levels, the result of sanitary discharges, stormwater runoff, and streambank erosion.



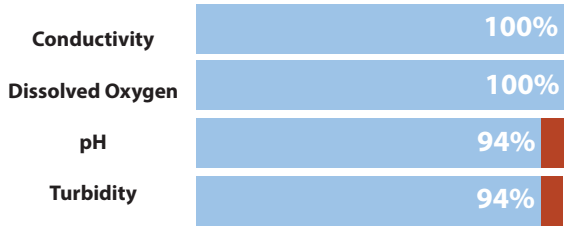
Erie Basin & Black Rock Canal

Stream Class: C
Stream Length: 6.6 miles
Water Quality Issues: Fish consumption is impaired due to PCBs from contaminated sediments and inactive hazardous waste sites. Combined sewer overflows along the canal are also a concern.



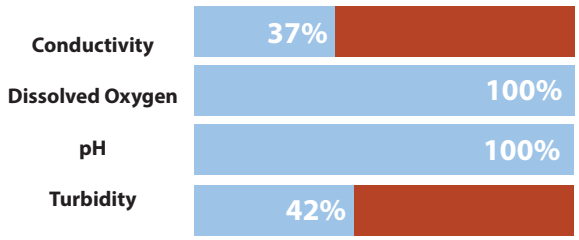
Niagara River

Stream Class: A (Special - Drinking Water)
Stretch Monitored: Upper and Lower Main Stem (Lake Erie to Lake Ontario)
Water Quality Issues: The Niagara is a source of drinking water for much of the region. The NYSDEC considers this use to be threatened by known contamination from toxic sediment and suspected contamination from combined sewer overflows and urban stormwater runoff.



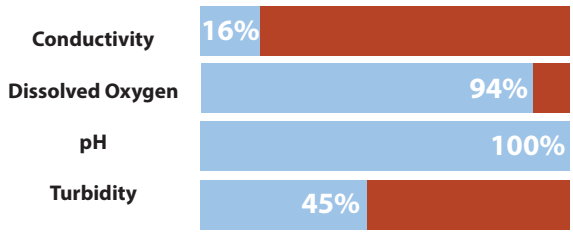
Cayuga Creek (Erie County)

Stream Class: Lower Stretch - C (from mouth to Lancaster)
Middle Stretch - B (from Lancaster to Folsomdale)
Stream Length: Lower Stretch - 13.5 miles; Middle Stretch - 116.6 miles
Water Quality Issues: Aquatic life and recreation are stressed by know pathogen pollution and suspected nutrient, silt, and sediment pollution. Sources include sanitary sewer overflows and suspected urban stormwater runoff and streambank erosion.



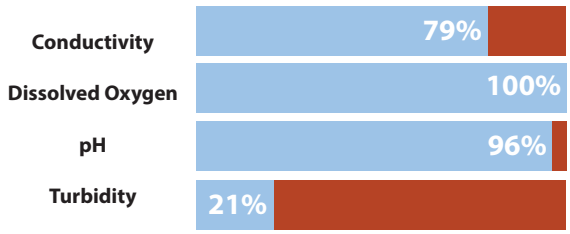
Scajaquada Creek

Stream Class: Lower Stretch - B (from mouth to Main St, Buffalo)
Middle Stretch - C (from Main St to Cheektowaga)
Stream Length: Lower Stretch - 0.3 miles; Middle Stretch - 8.3 miles
Water Quality Issues: Aquatic life and public bathing is precluded and recreation is impaired by low dissolved oxygen, excess nutrients, pathogens, and odors. Known sources include combined sewer overflows and urban stormwater runoff.



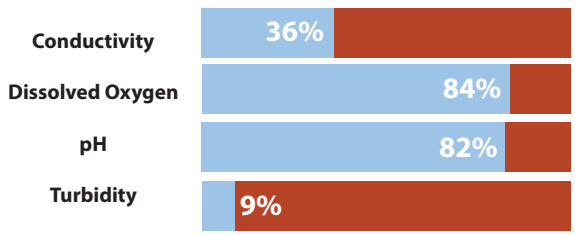
Tonawanda Creek (Lower Main Stem)

Stream Class: C
Stream Length: 11.9 miles (from mouth to NYS Barge Canal)
Water Quality Issues: Fish consumption is impaired while aquatic life and recreation are stressed by known toxic contaminated sediment, urban stormwater runoff, and suspected nutrient and silt pollution from sanitary discharges and streambank erosion.



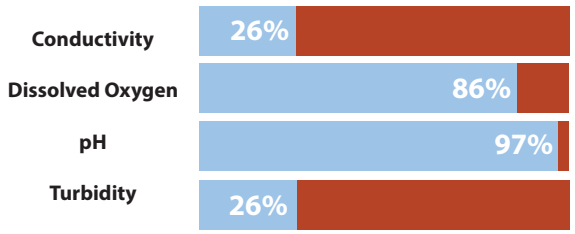
Grand Island

Stream Class: All are class B
Stream Length: 53.7 miles
Water Quality Issues: Habitat and aquatic life in the tributaries of Grand Island are thought to be threatened by elevated stream temperatures, silt, sediment, and nutrients linked to development in surrounding areas.



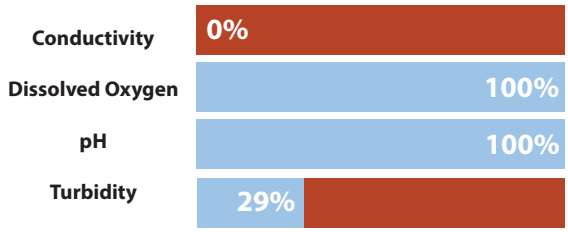
Cayuga & Bergholtz Creek (Niagara Falls)

Stream Class: Both creeks are Class C
Stream Length: Cayuga Creek - 21.6 miles; Bergholtz Creek - 33.1 miles
Water Quality Issues: Fish consumption is impaired (precluded in Bergholtz Creek) while aquatic life and recreation is impaired from known sources of urban stormwater runoff and toxic contaminated sediment.



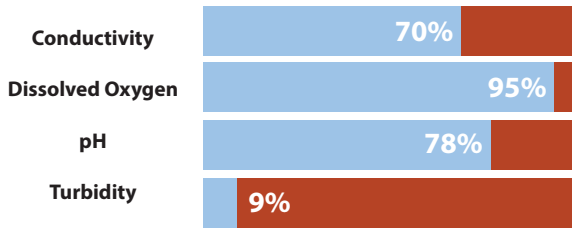
Ellicott Creek

Stream Class: B
Stream Length: 112 miles
Water Quality Issues: Aquatic life and recreation is impaired due to excess nutrients, pathogens, silt, sediment, from urban stormwater runoff and sanitary sewer overflows.



Gill Creek

Stream Class: C
Stream Length: 12.3 miles
Water Quality Issues: Aquatic life and recreation are impaired by stormwater runoff and suspected toxic contaminated sediment.



2.Water Quality Index

Site #	Site name	2016 WQI Score	2016 Grade	2015 Grade
	Gill Creek			
1	Reservoir Park	80	B	B
2	Hyde Park Lake	76	C	C
3	Gill Creek Park	73	C	D
	Cayuga Creek (Niagara County)			
4	Military Rd	70	C	D
5	Cayuga Drive	65	D	D
6	Bergholtz Creek	67	D	D
7	Sawyer Drive	60	D	C
8	Griffin Park	87	B	*
	Niagara River			
9	Broderick Park	86	B	B
10	Black Rock Canal Park	84	B	B
11	Aqua Lane Park	84	B	B
12	Niawanda Park	84	B	B
13	Gratwick Park	86	B	B
14	Lasalle Waterfront Park	86	B	B
15	Lewiston Docks	85	B	B
16	Beaver Island	84	B	B
17	Fort Niagara	84	B	B
	Grand Island			
18	Woods Creek at Buckhorn	70	C	D
19	Spicer Creek at E. River	67	D	D
20	Spicer Creek at Whitehaven	67	D	D
21	Spicer Creek at Bonnywoods	68	D	D
22	Big 6 at Marina	74	C	C
23	Big 6 at Staley	61	D	F
24	Baseline Rd	67	D	*
	Scajaquada Creek			
25	N. Creek S. Creek Drive Park	71	C	C
26	Cheektowaga Town Park	73	C	C
27	Forest Lawn	73	C	C
28	West Avenue	73	C	D
	Erie Basin & Black Rock Canal			
29	BR Canal At Route 198	85	B	B
30	BR Canal at Broderick Park	85	B	*
31	Lasalle Park	84	B	B
32	Erie Basin Marina	82	B	B

Site #	Site name	2016 WQI Score	2016 Grade	2015 Grade
	Lower Tonawanda Creek			
33	Sweeney Street	82	B	C
34	West Canal Marina	81	B	C
35	Mouth of Ransom Creek	78	C	C
	Ransom Creek			
36	Clarence Town Park	77	C	*
37	Miles Road Bridge	73	C	*
38	Glen Oaks	69	D	*
39	New Road Bridge	67	D	*
	Upper Tonawanda Creek			
40	41111 Main Street	74	C	*
41	Kiwanis Park	76	C	*
	Middle Towawanda Creek			
42	Stusser Road	76	C	*
43	Air Ville Road	75	C	*
	Ellicott Creek			
44	Island Park	76	C	C
45	Amherst St Park	77	C	C
46	St Rita's Lane	74	C	C
47	Rt 425 Overpass	72	C	D
	Cayuga Creek (Erie County)			
48	Clinton Street Bridge	75	C	C
49	Rowley Road Bridge	76	C	C
50	Como Lake Park	80	B	B
	Buffalo River			
51	Canalside	84	B	C
52	Riverfest Park	82	B	B
53	Red Jacket Park	75	C	B
54	Seneca Bluffs	79	C	C
	Cazenovia Creek			
55	Cazenovia Park	80	B	C
56	Seneca Park	77	C	C
57	Mill Road Park	79	C	C
58	Leydecker Road Bridge	79	C	C
	Buffalo Creek			
59	Hunters Creek	77	C	B
60	Elma Centennial Park	74	C	B
61	Elma Village Green	76	C	B
62	Borden Road Bridge	74	C	C
63	Burchfield Nature Center	73	C	C
64	Sill at Oxbow	72	C	C

Table 1: WQI score and grade listed were calculated using formulas indicated on page 2. Background color coincides with sub-watershed color on Map 1.

* Site was not tested

Data for select sites are available starting in 2011. Please view past Water Quality Reports on our website or contact Water Quality Specialist if interested.

Parameter Descriptions

Dissolved Oxygen (DO) is simply the amount of oxygen dissolved in the water, and is essential for the survival of nearly all aquatic life. DO can be decreased by sewage discharges, storm water runoff, and failing septic systems.

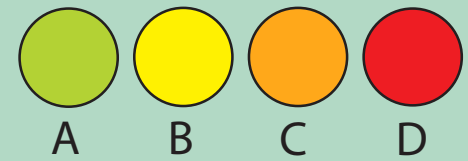
Turbidity is a measure of the amount of suspended material in water which can include soil particles, algae, plankton, microbes, and other substances. Higher turbidity increases water temperatures, decreases DO, provides refuge for harmful microbes, and can clog gills of fish and crustaceans.

Conductivity is a measure of the ability of water to pass an electrical current and is indicative of the presence of inorganic dissolved solids such as salts, chloride, nitrate, sulfate, and phosphate ions. Elevated levels may be from the presence of sewage or storm water discharges.

pH is a term used to indicate the alkalinity or acidity of a substance as ranked on a scale from 1.0 to 14.0. The majority of aquatic animals prefer a range of 6.5-8.0. pH outside this range reduces the diversity in the stream because it stresses the systems of most organisms and can reduce reproduction.

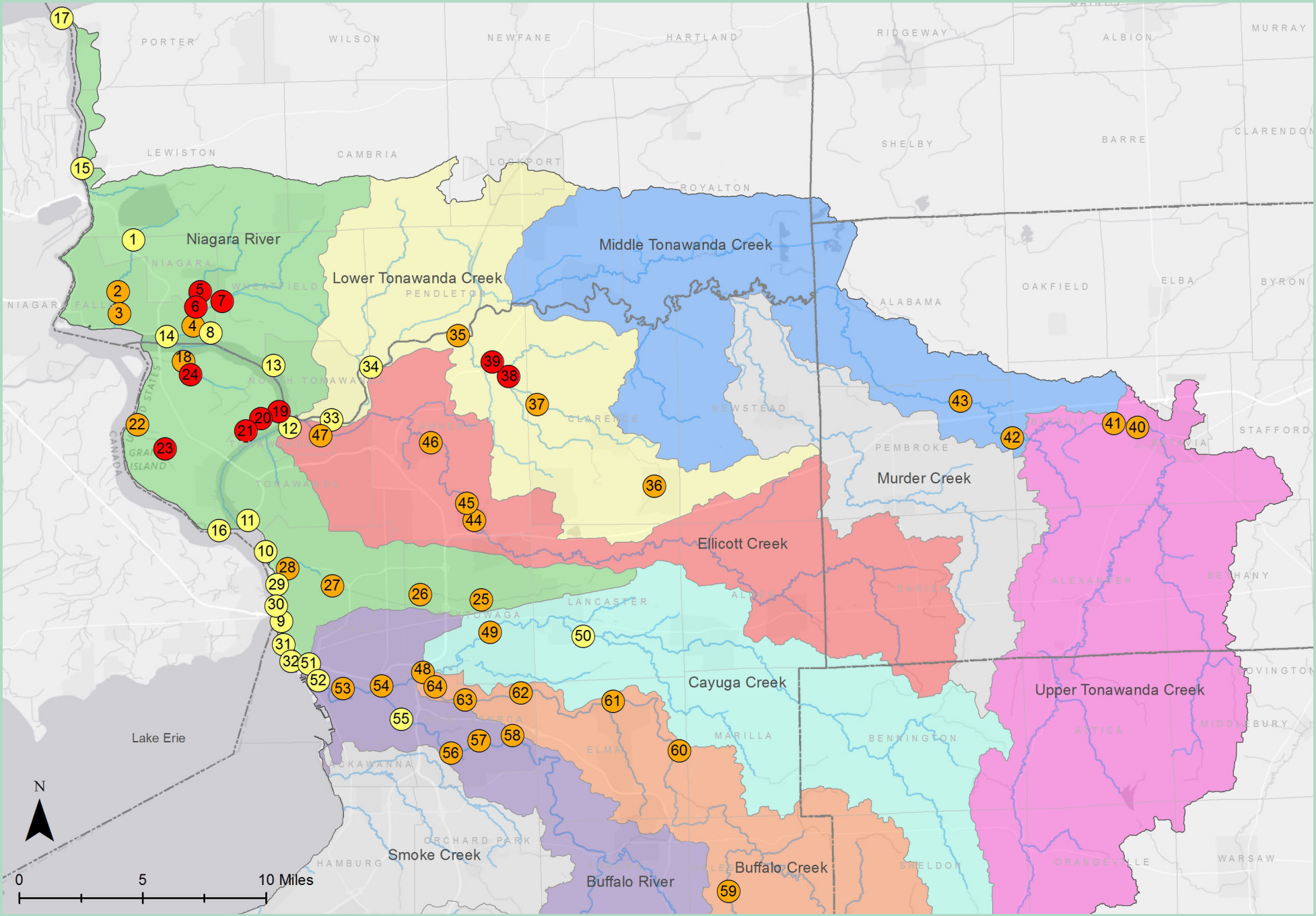
Temperature affects the oxygen content of the water (as temperature increases, DO decreases); the rate of photosynthesis by aquatic plants; the metabolic rates of aquatic organisms; and the sensitivity of organisms to toxic wastes, parasites, and diseases.

Site Scores



NOTE: No waterways received a grade A rating

Niagara River Watershed and Sub-watersheds



Map 1: Sample sites are numbered in correlation to Table 1 and are color coordinated to coincide with their WQI Score.

YOUNG
ENVIRONMENTAL
LEADERS
PROGRAM

Y.E.L.P!

Environmental Justice (EJ) is the concept that all people regardless of race, ethnicity, or income level have the right to live in a healthy environment. Historically, many communities in our area have been disproportionately burdened with environmental problems.

Riverkeeper, in partnership with Buffalo Public Schools and funding from NYSDEC and First Niagara Bank, launched a pilot environmental education program for students residing in these communities in 2014. In 2016, with new support from the Cameron and Jane Baird Foundation, the program continued with anticipated expansion in 2017. The Young Environmental Leaders Program (YELP) provides a unique opportunity for students to learn about local environmental issues that affect their neighborhoods. Students were recruited by partner teachers Adam Hovey of South Park High School (SP), and John Bihr of Riverside Institute of Technology (RIT).

The program consists of two components. First, students attend a series of hands-on experiential learning opportunities where they explore current environmental issues within a local context. Upon successful completion, the students gain three college credit hours. Second, a mentorship opportunity is presented for select students to participate in a research project alongside their teachers and Riverkeeper staff. The students receive a stipend and valuable experience in environmental science.

The students selected for the 2016 mentorship included **Amanda Boorom**, **Destiny Barrett**, and **Shwe Phew Moo** of SP **and Mehdi Muzaffari** and **Tila Khanal** of RIT.

Students were trained to use high-tech water quality testing equipment and tested the following locations within the city of Buffalo during the summer: Cazenovia Park, Red Jacket Riverfront Park, Canalside, Broderick Park, and Black Rock Canal Park. The presence of combined sewer overflows at or near these sites provided the opportunity to educate the students about the workings of a combined sewer system and the threats they pose to the natural environment. Students collected samples for *E. coli,* as it is used as an indicator of sewage pollution.

Results from the *E. coli* sampling were used to update Swim Guide, a website and app that presents free water quality information for over 7,000 possible swimming locations in multiple countries. Created and managed by Lake Ontario Waterkeeper, Swim Guide utilizes data collected from government agencies or local affiliates. Information is posted online to help visitors determine if beaches are safe for swimming. While the YELP sampling locations are not regulated swimming beaches, citizens are commonly observed recreating and contacting the water.

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Visit Swim Guide today!
https://www.theswimguide.org/

Swim Guide utilizes a 'Beach Finder' map, as seen below, allowing for easy navigation. Colors of water quality icons refer to the status of the location and whether or not most recent tests have met water quality standards.

Map 2: YELP sample results from five locations were uploaded to Swim Guide.

Swim Guide updates were made by comparing test results to the Environmental Protection Agencies Beach Action Value (BAV) of 235cfu/100mL. This value is often used for making beach notification decisions. As seen in the chart to the right, high levels of *E. coli* were recorded in Buffalo throughout the summer.

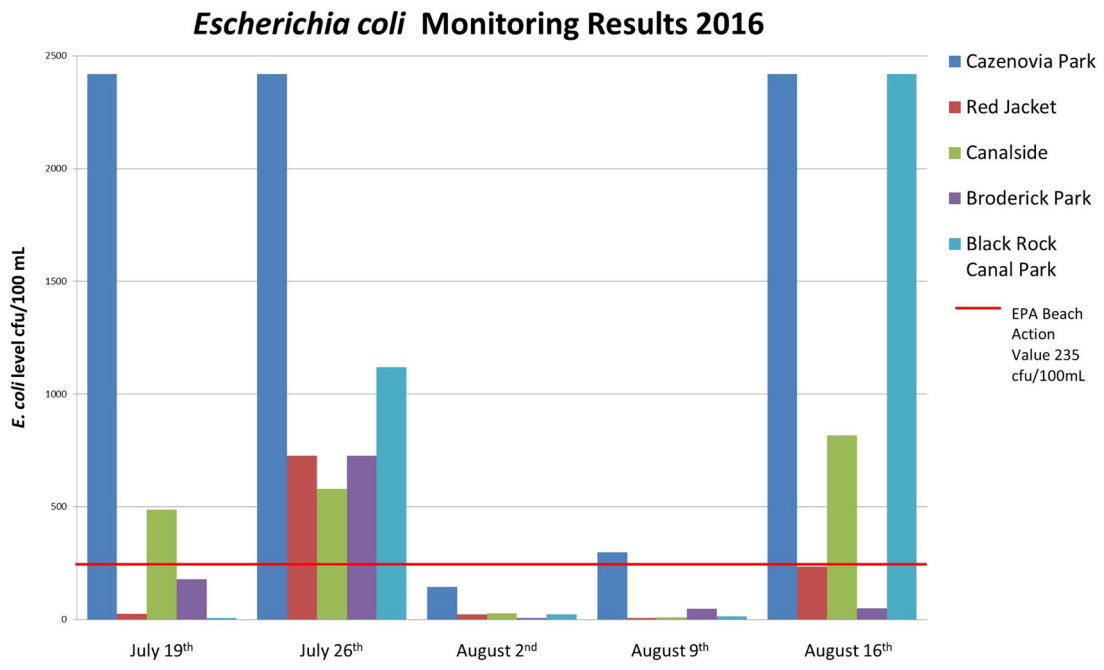


Figure 1: *Escherichia coli* results from YELP sampling locations in comparison to the EPA Beach Action Value.

Another element of the YELP mentorship involved litter pickup at the five sampling locations. Students spent five minutes collecting trash and recording what they found and how much they found. Over 1200 cigarette butts, 18 pieces of fishing line/lures, and 279 pieces of broken glass were found. Students then researched how these types of litter impact local wildlife. An educational display, which can be viewed below, was created using select findings. This display piece, in addition to the water quality and *E. coli* findings, was presented by the students at the NYPA Wildlife Festival. This event provided an opportunity for the students to present their findings while engaging with the local community.

A Growing Concern - Microplastics Pollution

Microplastics are small plastic particles smaller than 5mm in length. They originate from a wide variety of sources, including the degradation of larger plastic debris, microbeads from personal care products, and fibers from clothing. These tiny particles are finding their way into our water resources and pose many potential threats to aquatic life. Studies have found microplastic in the digestive tracts of many species of birds and fish, which can cause starvation and dehydration.

In 2012, sampling verifying the presence of microplastics was conducted within the Great Lakes Basin.[1] Research efforts pertaining microplastics continues to increase worldwide. Developments are still being made in regards to standardizing sampling and analytical methods to detect the presence of microplastics.

1 Eriksen, M., et al. Microplastic pollution in the surface waters of the Laurentian Great Lakes. Mar. Pollut. Bull. (2013), http://dx.doi.org/10.1016/j.marpolbul.2013.10.007

Sources of Ongoing Pollution

There are two forms of pollution in the watershed: legacy pollution, which was discharged to the water during our industrial past, and ongoing pollution which continues to be discharged into our waterways. The Riverwatch Program monitors for water quality parameters affected by ongoing sources of pollution.

Combined Sewer Overflows (CSOs)

During rain events, water from streets, roofs, and lawns run off into storm drains and combines with sewage in one system. When there is more than a half inch of rain, the volume of water overwhelms the system and overflows into local waterways by design. These overflows contain not only stormwater, but untreated human waste, toxins, and debris.

Stormwater Runoff

In rural areas or areas with separated sewer systems, rainwater runs directly off of buildings, roads, lawns, and farm fields into waterways, often with no type of filtration. This stormwater runoff carries nutrients and pesticides from lawns and fields, toxins and salts from roads, along with silt and sediment from erosion.

Land Use

Waterways in their natural state have areas of forest, shrub land or wetlands along shorelines. This vegetation is natural infrastructure that helps filter stormwater and control erosion. Development of the land in our watershed has removed much of this natural resiliency resulting in increased erosion and pollution from stormwater.

Solutions to Ongoing Pollution

You can help reduce stormwater and sewage pollution! Below are three different green infrastructure solutions you can apply at your own home to reduce the amount of stormwater from your property.

Downspout Disconnection

Downspouts on many homes are connected directly to the combined sewer system, contributing to combined sewer overflows. Disconnecting downspouts from the sewer system allow roof water to drain to lawns and gardens. It is a more natural way to manage roof runoff as it allows water to soak into the ground as plants and soils filter pollutants.

Rain Barrels

Rains barrels are containers that collect and store rain water for future uses, such as watering landscaping, while decreasing the amount of storm water runoff that leaves your property. A rain barrel is placed under the downspout to channel rainwater into the barrel for later use.

Rain barrels are available for purchase at Riverkeeper. View **http://bnriverkeeper.org/rainbarrels/** for more information.

Rain Gardens

A rain garden is a planted depression that allows rainwater runoff from impervious urban areas like roofs, driveways, walkways, and compacted lawn areas to be absorbed. This reduces rain runoff by allowing storm water to soak into the ground. Rain gardens can reduce the amount of pollution reaching creeks and streams by up to 30%.

Related Riverkeeper Projects

For additional information on these programs and more, please visit ***http://bnriverkeeper.org***

Water Academy

Water Academy is a field-based college credit environmental science class also open to the public. Classes are instructed by staff and local experts in Western New York.

Shoreline Sweeps

Shoreline Sweeps engage 2,000 volunteers and removes 20 tons of trash from 45 shoreline sites throughout the Niagara River Watershed annually.

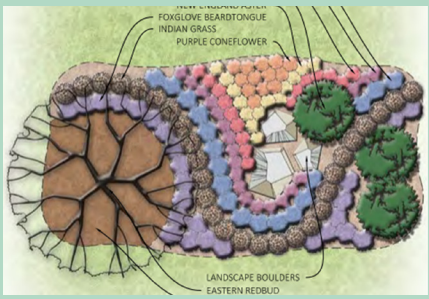
River Tours

River Tours provide citizens a direct connection to the water through paddling, hiking and biking tours led by expert guides in and along waterways. Snowshoe tours will be offered in 2017.

Restore Corps at Gill Creek

Restore Corps engages community volunteers to remove invasive vegetation and plant native trees and shrubs to help prevent stormwater runoff. In 2016, work kicked off to begin 3 years of plantings along Gill Creek in Niagara Falls.

Native Plant Guide



The Native Plant Guide is an educational tool to instruct local homeowners, nurseries, and organizations about proper use of native plants in landscaping. Guides are available at the Riverkeeper office.

Healthy Niagara

Under phase two of the **Healthy Niagara** initiative, Riverkeeper conducted two years of extensive water sampling and stream assessments to utilize in the creation of implementation plans for 5 priority sub-watersheds in the Niagara River Watershed.

Scajaquada Creek Initiative

Our **Scajaquada Creek Initiative** is dedicated to restoring the water quality of Scajaquada Creek and to transform this waterway into a vibrant, healthy, accessible ecosystem for the entire community.

Living Shorelines Program

The **Living Shorelines Program** aims to restore both hardened and degraded shoreline areas to their natural, resilient, and self-repairing form which will better support a sustainable, higher-functioning ecosystem.

Buffalo River Habitat Restoration

For the last 13 years, Riverkeeper has coordinated the **Buffalo River Remedial Action Plan**. In-water and upland restoration at specific sites are nearing completion. Construction for other sites will kick-off in 2017.

The Riverwatch Team

Staff

Chirs Murawski - Director of Citizen Engagement
Liz Robbe – Water Quality Specialist
Wendy Paterson – Community Liaison

Interns

Chloe Wasteneys – SUNY Buffalo
Olivia Patick – SUNY Buffalo
Kate McGowan – SUNY ESF
Ron Zietz – ECC
Darius Huggins – ECC

Volunteers

Buffalo Creek: Ron Zietz, Krista Wagoner, John Sadewater, Jared Zajac, Louis Rodriguez, Tim Englert, Pat & Bill Townsend
Buffalo River: Intefada Wardia, David Solowski, Judy Hendee, Elizabeth Mattson
Cayuga Creek (Erie County): Richard Zacher, Ryan Marchant, Mike Conway
Cayuga Creek (Niagara County): Brian Barrey, Edward Nickson, Brian McGowan, Thomas Heyer
Cazenovia Creek: Jack Schweigel, Lex MacCubbin
Ellicott Creek: Mark Casper, Brian Foley, Steve Hassett
Erie Basin & Black Rock Canal: Frank Balics, Victoria Anderson, Sherrill Quinn
Niagara River: Jim Galbo, Michelle Johnson, Beverly Seyler, Coleen Cook-Wagner, Robin Wagner, Andrew Lui, Yeu Deck Ngui
Grand Island: Greg Madejski, Diane Evans, Ron & Denise Rezabek
Scajaquada Creek: Elizabeth Oldfield, Glyn Holden, Holly Graham, Timm Otterson
Tonawanda Creek: Jude Hammer, Val Macer, Mary McNeil, John Svec, Kandy Krampitz Svec, Kate Svec, Tayler Schweigel
Ransom Creek: Joyce Ciski, Paul Jones, Nicole Peradotto
Gill Creek: Alan Cobb, Jim & Dawn Cody, Griffin Gansworth

Volunteer Spotlight

Ryan Marchant

Cayuga Creek (Erie County)

Ryan spends most of his free time outdoors with his dog Baileigh hiking, camping, and kayaking. He joined Riverwatch in 2016, adding to his Riverkeeper volunteer resume. In the past he has worked to clean up shorelines, plant trees and shrubs along Gill Creek in Niagara Falls, and to promote the Rain Barrel initiative through the City of Buffalo. Ryan is also a graduate of BNR's River Academy program. "I find that volunteering with Riverkeeper is a great way to give back to the waterways that I derive so much enjoyment from," expressed Ryan.

Kandy Krampitz Svec & Family

Middle Tonawanda Creek

Inspired by their love of the outdoors, the Svec family began volunteering at the Riverkeeper Shoreline Sweep. They have more recently become involved with Riverwatch, Gill Creek Restoration Plantings, and kayak tours. They consider themselves 'stewards of the earth' and enjoy actively volunteering to make a difference. They bring their children to events to encourage participation in environmental community service. "Our family admires the great work BNR has done for the community and Western New York," Kandy stated.

Buffalo Niagara **RIVERKEEPER®** is a community-based organization dedicated to protecting the quality and quantity of water, while connecting people to water. We do this by cleaning up pollution from our waterways, restoring fish and wildlife habitat, and enhancing public access through greenways that expand parks and open space.

Buffalo Niagara **RIVERKEEPER®** is a member of the global **WATERKEEPER®** ALLIANCE.

721 Main Street
Buffalo, NY 14203
(716) 852-7483
www bnriverkeeper.org
@bnriverkeeper

BUFFALO NIAGARA RIVERKEEPER®

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