

Spotlight on Lake Erie

Eastern Basin

Buffalo Niagara RIVERKEEPER

Great Lakes Legislative Caucus
September 26, 2015



An aerial photograph of a river delta, showing a central channel branching into several smaller channels that flow into a larger body of water. The water is a deep blue, and the surrounding land is a lighter, textured blue. At the top of the image, there is a yellow banner with a black arrow pointing to the right. The text "Celebrating 25 Years" is written in white on the banner.

Celebrating 25 Years

Our Mission

Protect water quality and quantity for present and future generations while connecting people to water

BUFFALO NIAGARA RIVERKEEPER®

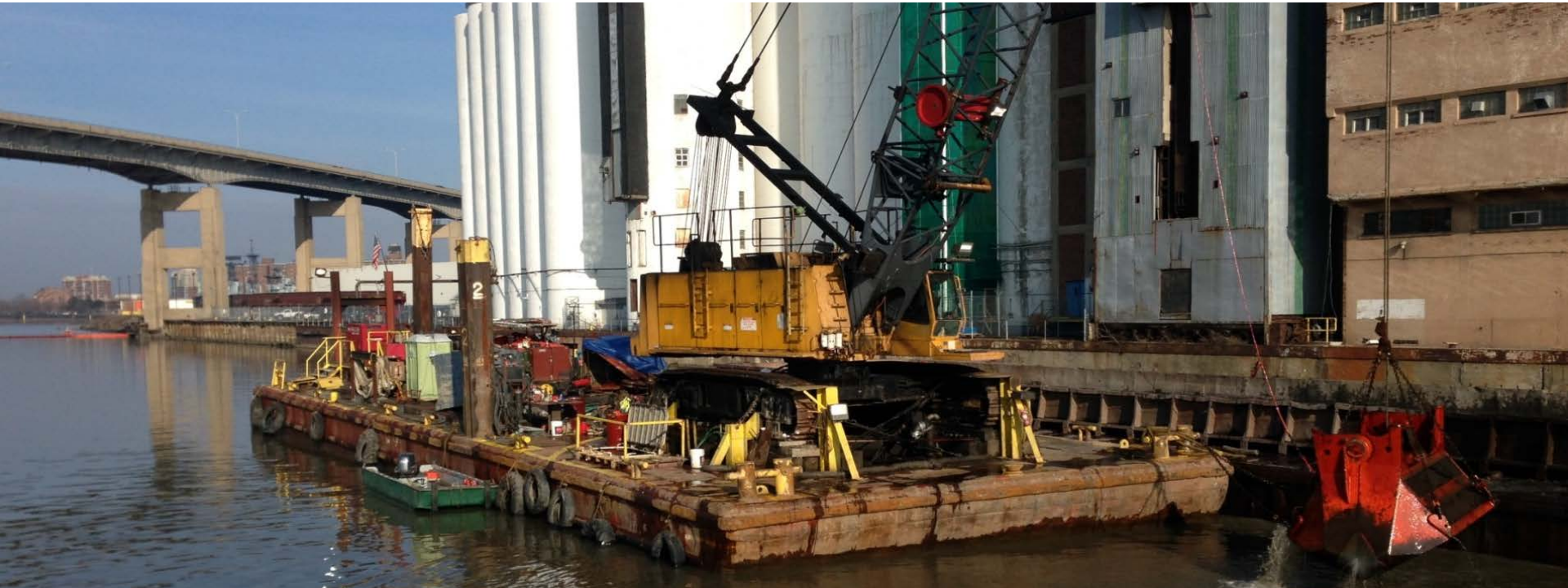


"The Buffalo River is a **repulsive holding basin** for industrial and municipal wastes, it is devoid of oxygen and almost sterile..."



Cleaning Up Our Industrial Past

Buffalo River Restoration Partnership



BUFFALO RIVER RESTORATION PARTNERSHIP



Honeywell

www.buffaloriverrestoration.org

BUFFALO NIAGARA RIVERKEEPER®



Photo courtesy of: Lower Lakes
Marine Historical Society

Courtesy: Lower Lakes Marine Historical Society

Our Legacy



Heritage Press



Our Future



Restoring Our Water Quality

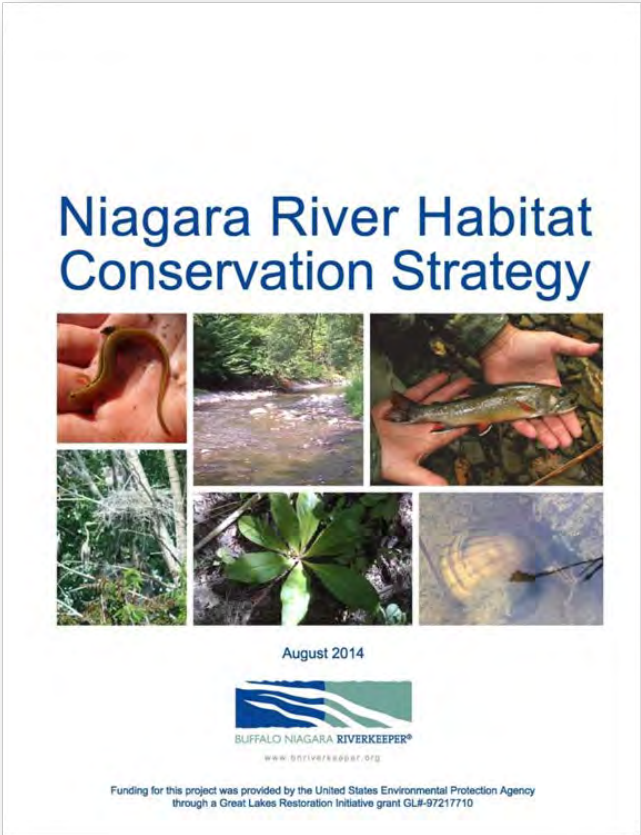
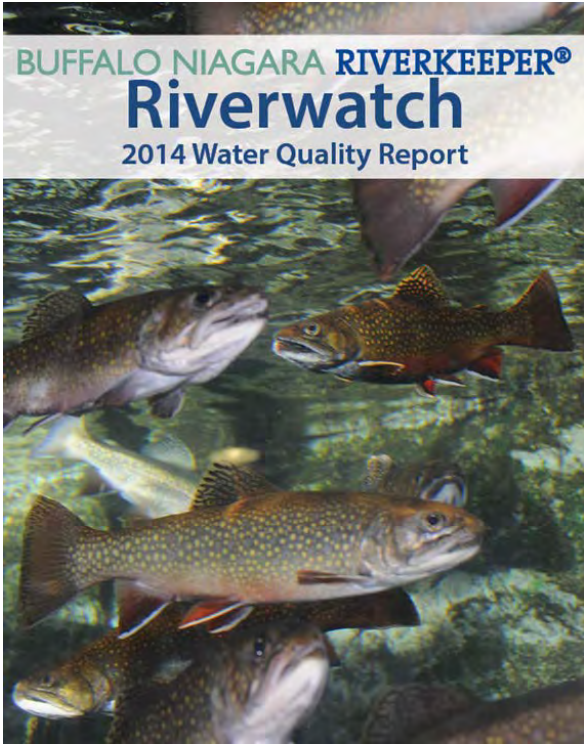
Green Stormwater Management



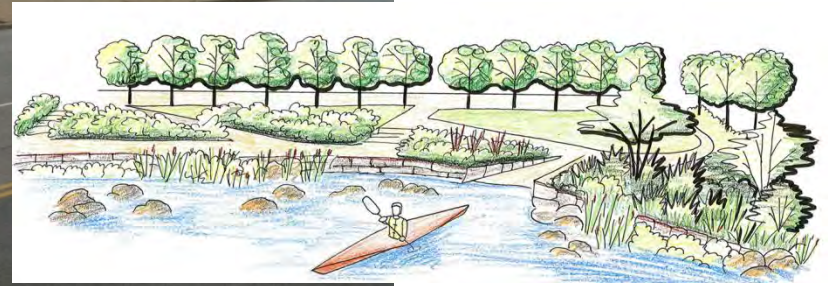
Protecting our Living Infrastructure



Restoring Habitat for Fish & Wildlife



Enhancing Communities, Parks and Open Space



BRODERICK PARK MASTER PLAN



Connecting People to Our Water



“Rust to Blue”

Blue Economy Guiding Principles

- 1) Healthy water drives economic revitalization.
- 2) Public access and open space protection is prioritized.
- 3) Natural systems are designed into community redevelopment.
- 4) The Niagara River Greenway is a catalyst for waterfront revitalization and connections.
- 5) Public, private and non-profit partnerships.





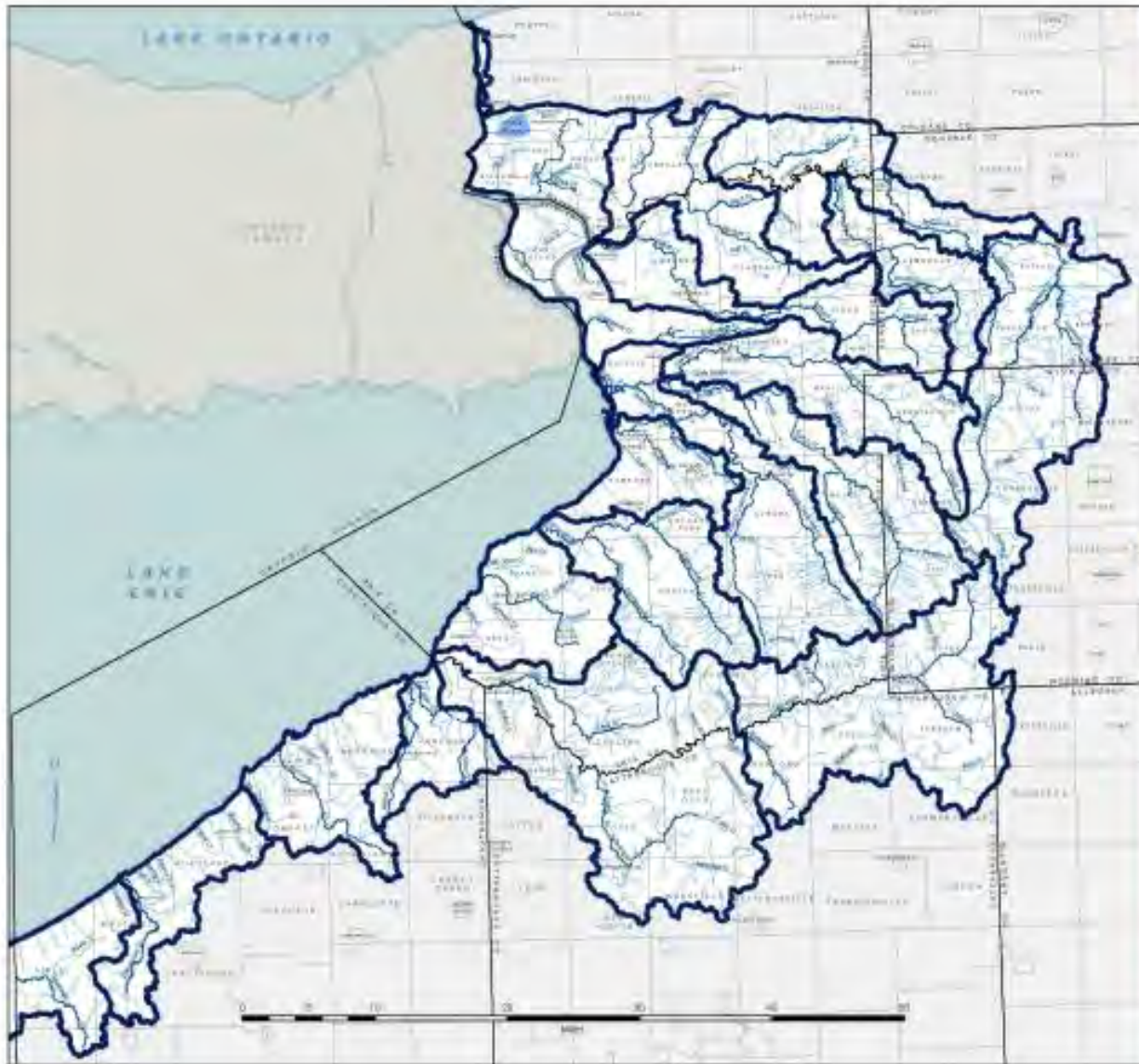
Lake Erie

Lake Huron

Niagara River

Buffalo, NY

Lake Ontario



LAKE ERIE WATERSHED

Lake Erie Watershed
Protection Alliance
(LEWPA)

-  Watershed Boundary
-  County
-  Municipality

LEWPA is a 501(c)(3) non-profit organization.
 Address: 2175 Dundas Street West, Suite 200
 Mississauga, ON L4X 1L3
 Phone: (905) 276-1111
 Website: www.lewpa.com



WATERSHED NAMES

BASED ON USGS 10-DIGIT HYDROLOGIC UNITS

Key Finding #1

High # of stream segments are classified as Impaired



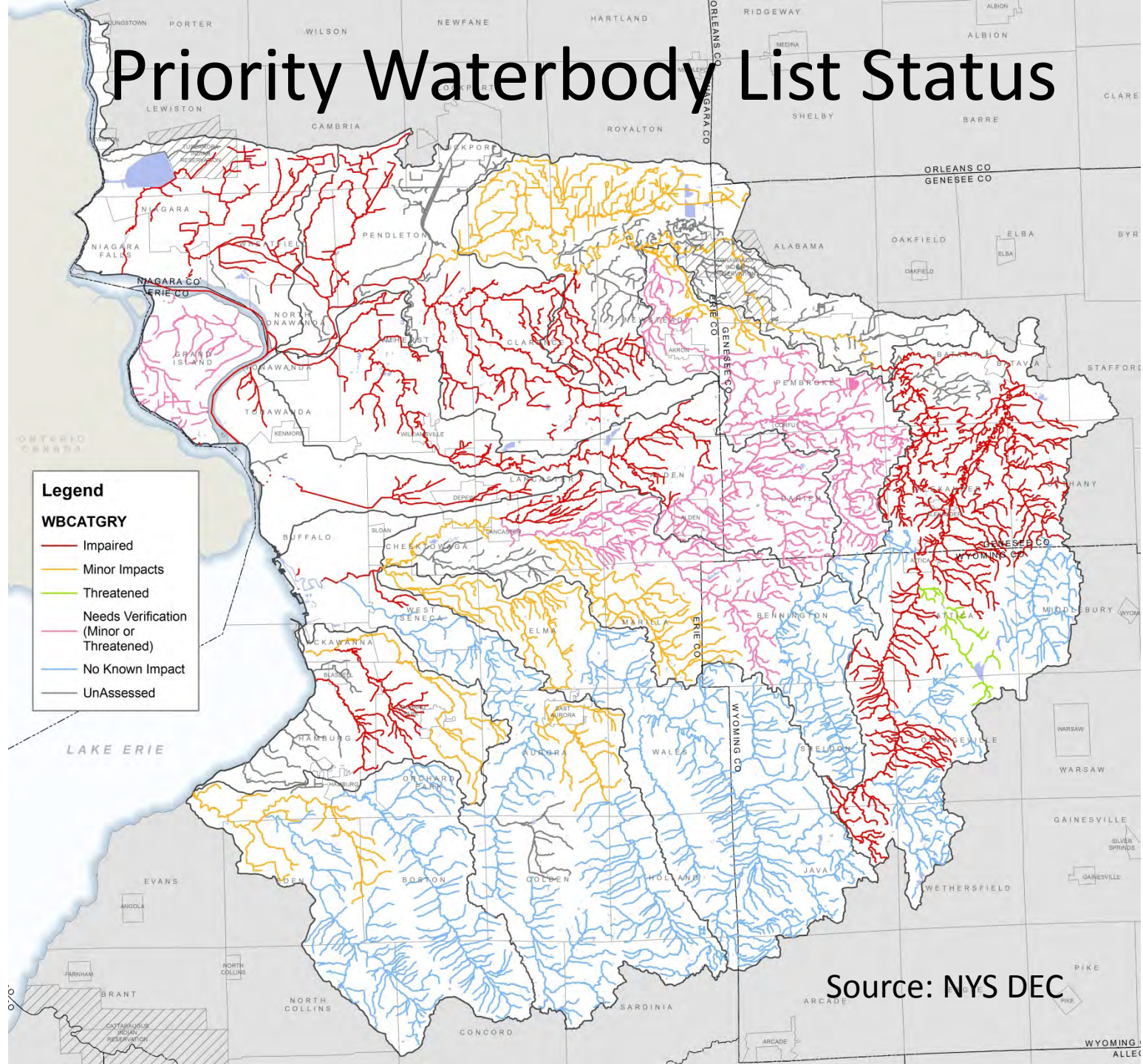
- 56% of Priority Waterbodies List are Impaired (NYS DEC)
- Not supporting intended uses
- Most impaired sub-watersheds:
 - Niagara River
 - Ellicott Creek
 - Lower & Upper Tonawanda

Priority Waterbody List Status

Legend

WBCATGRY

- Impaired
- Minor Impacts
- Threatened
- Needs Verification (Minor or Threatened)
- No Known Impact
- UnAssessed



Source: NYS DEC

Primary Contributors to Water Quality Impairment

- Combined Sewer Overflows
- Sanitary Sewer Overflows
- MS4s (Stormwater Run-off)
- Agricultural Operations
- Historic Contamination (Brownfields)
- Thermal Increases
- Erosion & Sedimentation
- Invasive Species
- **Emerging Contaminants & Unknowns**

Key Finding #3

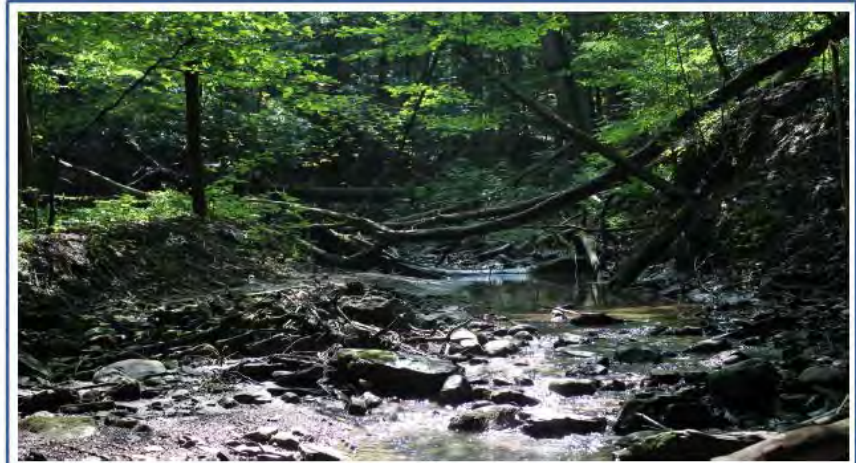
Lack of sufficient regional **Living Infrastructure Network/ Protections**



...an interconnected network of waterways, wetlands, woodlands, wildlife habitats, and other natural areas of significance.

Components/Functions:

- Riparian Buffers/Filtration
- Wetlands/Filtration & Storage
- Floodplains/Connectivity & Flood Mitigation
- Natural Springs/Recharge
- Headwater Forests/Drinking Water
- Wildlife Corridors/Biodiversity



Join Buffalo Niagara RIVERKEEPER in our effort to protect the Eighteenmile Creek headwater forest. This fragile and richly diverse ecosystem is a precious resource for our region: over 31 tree species, 14 shrub types and 113 species of herbs and understory plants work together to filter local drinking water and provide habitat to over 150 bird species, native trout, and salamanders. In partnership with *The Nature Conservancy*, a globally renowned conservation leader, and *Erie County Department of Parks, Recreation and Forestry*, Riverkeeper is working to protect this land for generations to come. We need your help to meet a 60-day challenge so funding is not lost. These are OUR WATERS and they need our protection.

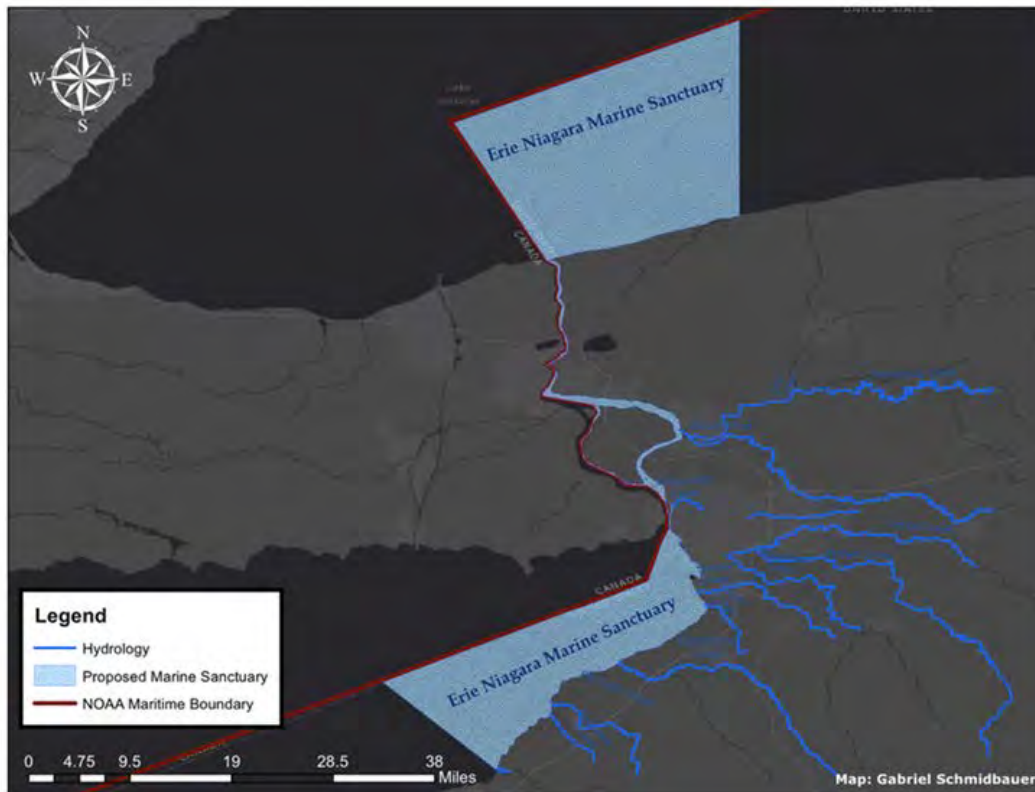


To learn more and donate to this project, please visit: www.bnriverkeeper.org/18mc or contact Kerrie Gallo, Director of Ecological Programs, at (716) 852-7483 ext. 30 and Susan Kornacki, Marketing and Development Manager, at (716) 852-7483 ext. 38.

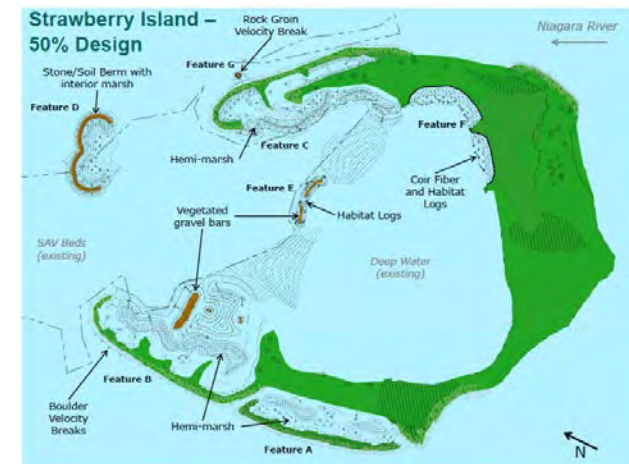


Buffalo Niagara RIVERKEEPER is a community-based organization dedicated to protecting the quality and quantity of water, while connecting people to water. We do this by cleaning up pollution from our waterways, restoring fish and wildlife habitat, and enhancing public access through greenways that expand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





Graphic/Photo Credits: Jay Burney and NYPA



NOAA Marine Sanctuaries are dedicated to preserving, protecting, and promoting nature, biodiversity, and cultural heritage. **Imagine** this water based and offshore **sanctuary** that focuses on **ecosystem protection**, fish, bird and other wildlife habitat, native aquatics, cultural heritage, recreation, education, research, and the kind of **economic development** that would anchor the WNY region in a vitality and resurgence that would create wealth for a broad population for **generations to come**. This would anchor a real **“Blue Economy.”**

Key Finding #7

Lack of Climate Change Data Tracking & Resiliency Planning



2011 Hurricane Irene (VT Route 100)

- Still a big unknown
- Can't Plan without data that tracks changes in:
 - Rainfall
 - Flow Data
 - Lake Levels
 - Storm Frequency & Intensity
- Infrastructure & Development at Risk



Photo Credits: Jay Burney

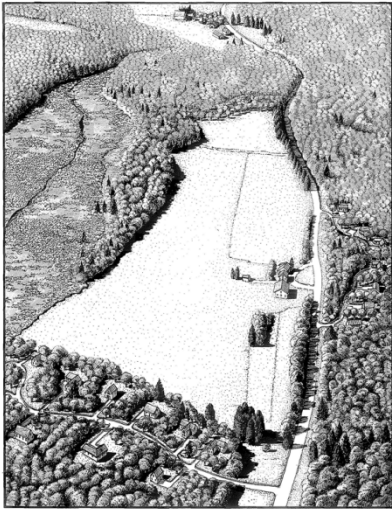
Key Finding #9

Sprawl/significant rate of development despite significant population losses.

Between 2000-2010 the watershed:

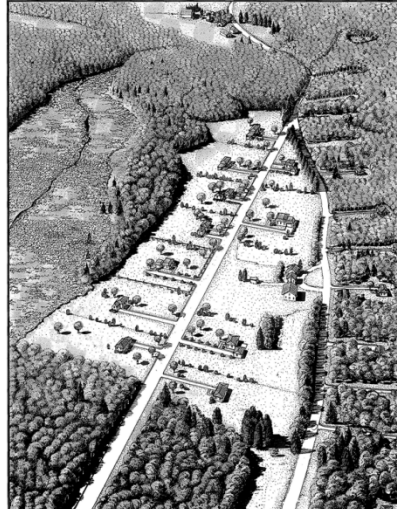
- Added 14,707 acres of “urbanized land”
- Added 142.31 miles of new roads
- Added 21,407 new residential structures

***Lost 37,450 people**



Aerial View of Site C After Creative Development

43



Aerial View of Site C After Conventional Development

42

Key Finding #10

Highly Agricultural Sub-watersheds (Bacterial, Sediment & Nutrient Loading)



- 33% Watershed riparian lands in Ag use*.
- Watershed has no TMDLs in effect
- 12 of 35 Impaired waters listed for TMDLs
- Data & discussion needed

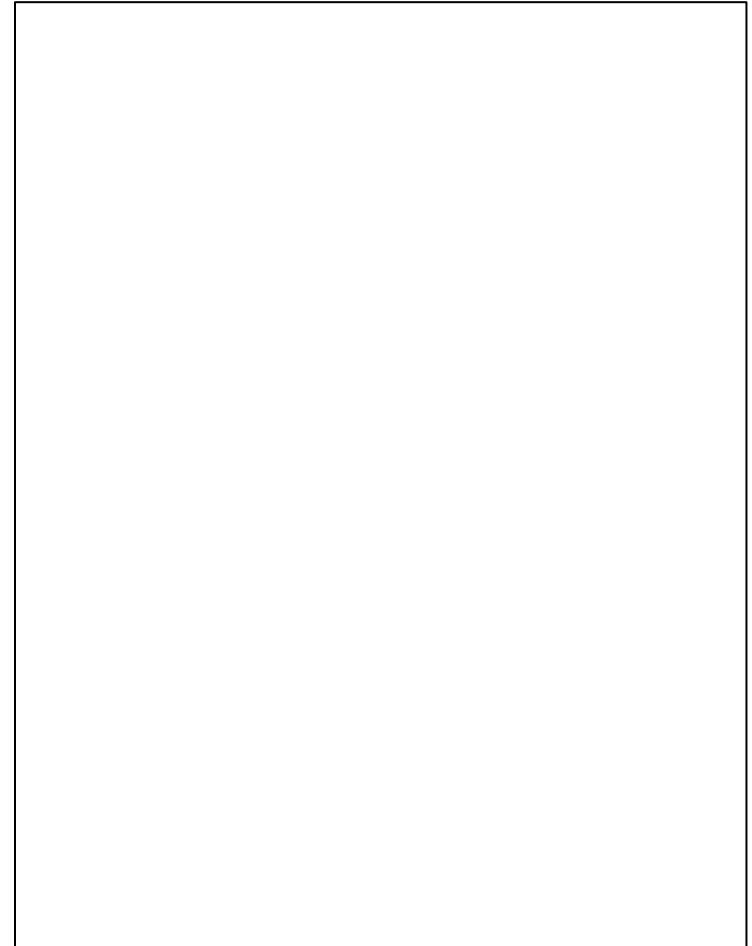
*BNRK Habitat Strategy Riparian Lands Assessment

Western Lake Erie Algal Blooms





Through a highly collaborative process, **One Region Forward** will build on the region's momentum toward sustainable development, fill key gaps in planning and set the stage for a more vital future for Buffalo Niagara.



Key Finding #18

Inadequate Tracking and Management of Invasive Species

- Details on Location, Extent & Movement
- Trends
- Biggest Threats
- Mitigation BMPs
- Funding for Long-Term Management Lacking



Asian clams. Photo: Crown Copyright 2009 - GB Non-Native Species Secretariat



Partnerships for Regional Invasive Species Management (PRISMs)



Cornell University
Cooperative Extension



8 Regional PRISMs within NY

WNY PRISM Mission

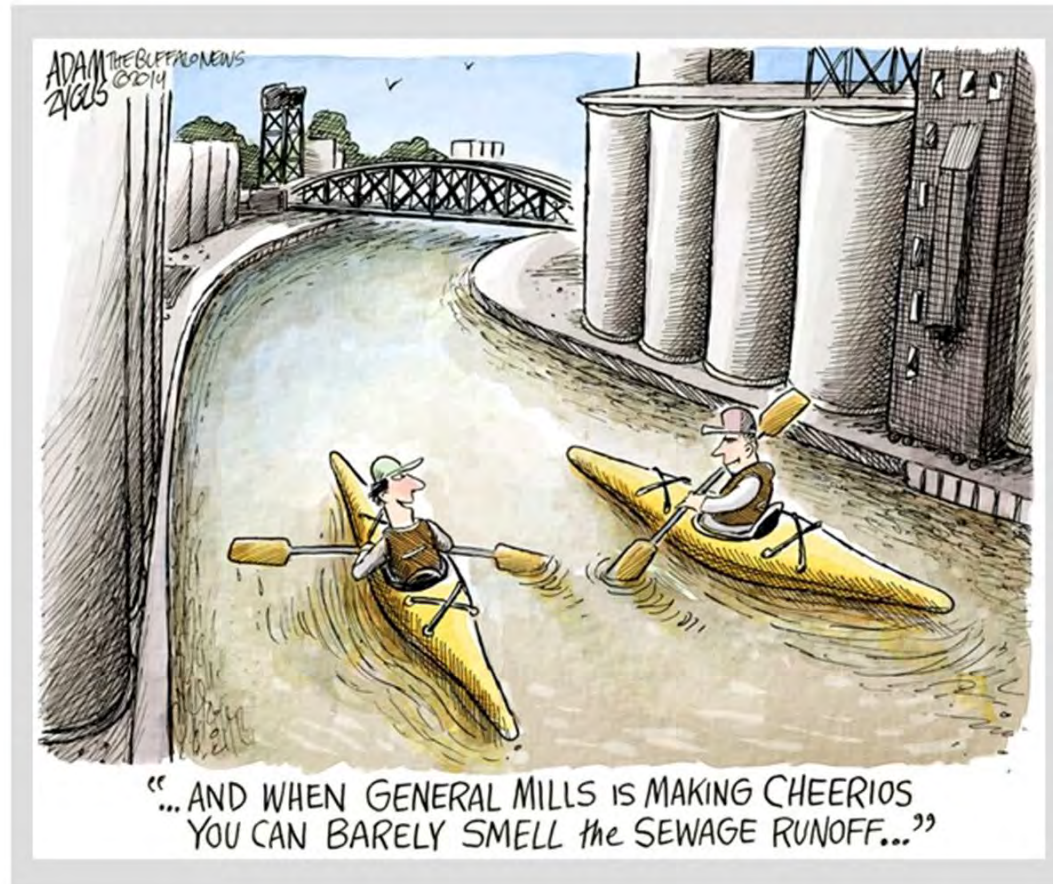
"Proactively identify, evaluate, and address invasive species priorities in western New York using a coordinated partnership of local professionals, organizations, and private citizens to improve, restore, and protect local aquatic and terrestrial resources."

*Information courtesy of WNY PRISM



Key Finding #19

Combined Sewer Overflows are a Major Pollution Contributor



EPA 2012 Recreational Water Quality Criteria

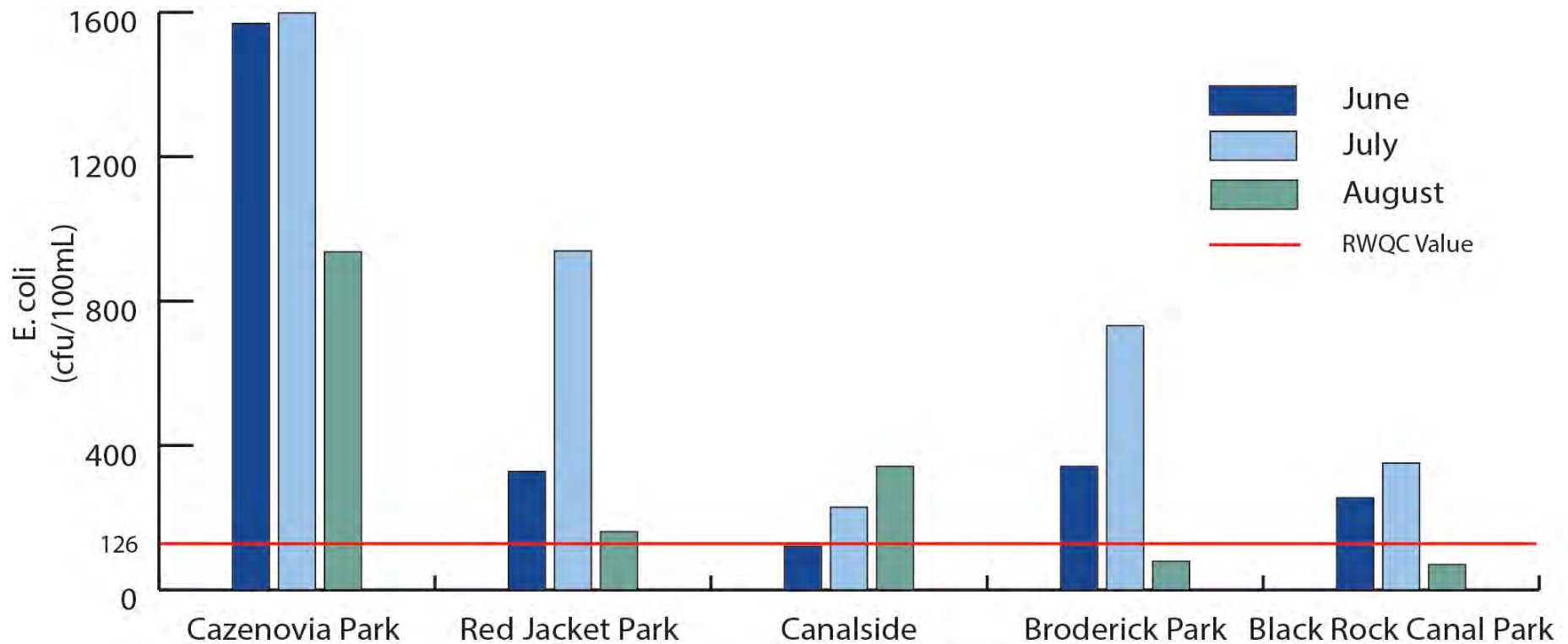
| CRITERIA ELEMENTS | Recommendation 1 Estimated Illness Rate 36/1,000 | | Recommendation 2 Estimated Illness Rate 32/1,000 | |
|---------------------------------|---|---------------------|---|---------------------|
| | GM (cfu/100 mL) | STV (cfu/100 mL) | GM (cfu/100 mL) | STV (cfu/100 mL) |
| Enterococci (marine & fresh) | 35 | 130 | 30 | 110 |
| <i>E. coli</i> (fresh) | 126 | 410 | 100 | 320 |

1. Geometric Mean (GM) - The waterbody GM should not be greater than the selected GM magnitude in any 30-day interval.

2. Statistical Threshold Value (STV) - There should not be greater than a ten percent excursion frequency of the selected STV magnitude in the same 30-day interval.



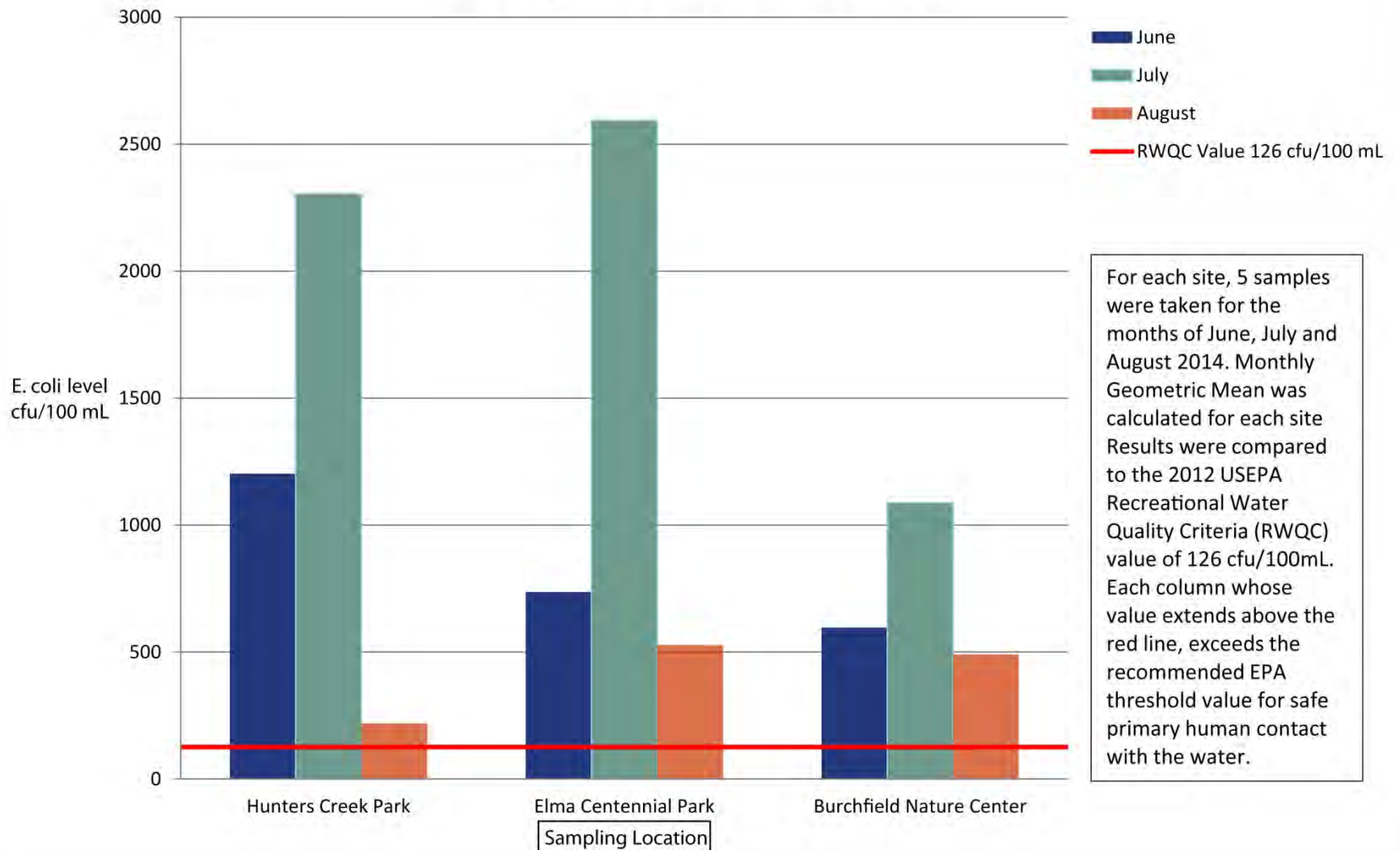
YELP *E. coli* Monitoring Program Results 2014



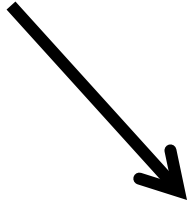
Buffalo River RAP

Escherichia coli Monitoring Results 2014

Monthly Geometric Mean Values



Cazenovia Creek



Combined Sewer Overflow

Key Finding #20

***Municipal Sewer
Overflows are a bigger
problem than originally
suspected***



- Caused by rain & groundwater inflow
- 1,440 overflow incidents in 1.5 yrs
- Most Muni's have 1 incident/year
- Cheektowaga = 511
- Volumes not always tracked



Buffalo's Sewer Authority recently adopted a Long Term Control Plan, committing to reduce combined overflows over a 19-year period.



Key Finding #25

Impacts of Emerging Contaminants in the Watershed are Unknown



- New contaminants are finding their way into waters
 - Pharmaceuticals
 - Bisphenol A (BPA)
 - Pesticides
 - Antibacterial Agents
 - Microplastics
- Extent & Impacts unknown
- ***Erie County Microbeads ban!!***

August 12, 2015

"It shall be unlawful for any person, firm, corporation, or any other entity no matter how constructed to sell, offer or expose for sale, give or furnish any personal cosmetic product which contains microbeads..."



Blue Economy Innovation and Leadership in the Great Lakes

Ripple Effect

\$1.3M USEPA investment
in Riverkeeper (2003-14)

= **\$75M** for Buffalo River remediation

= **\$231M** for aggregated for
revitalization and restoration

= **807** induced jobs



What's Missing in WNY?

- Regional definition of the Blue Economy
- Performance metrics (*i.e.*: pwc's TIMM model)
- New York State comprehensive Water Strategy
- Alternative financing mechanisms (*i.e.*: *impact investing*)
- Diverse, multi-sector engagement (*i.e.*: *social entrepreneurs*)



BloombergBusiness

“This isn’t about, it would be nice to solve these problems,” said Scott, 46, of issues such as over-fishing and land conservation. “We have to solve them. That will ultimately result in more long-term, sustainable capital markets.”

-Encourage Capital, partner on Impact Investing



NatureVest’s mission is to create and transact investable deals that deliver conservation results and financial returns for investors.



DOWN BY THE RIVER RELEASE PARTY

SATURDAY, MAY 16TH 12-5PM

FLYING BISON BREWING CO. 840 SENECA ST BUFFALO, NY 14210

GREAT WATER



MAKES GREAT BEER

MUSIC BY:
SKIFFLE MINSTRELS
&
12/8 PATH BAND

\$10 ADMISSION
INCLUDES 1 FREE BEER
WITH PROCEEDS TO BENEFIT:
BUFFALO NIAGARA RIVERKEEPER



It takes great water to make great beer. Flying Bison is proud to partner with Buffalo Niagara Riverkeeper, an organization dedicated to protecting water quality.

Photo: Saffron Blaze

WNY is a place that is lifting itself, is rooted in community experiences and is not for sale...





It's ok to be a little edgy...



Thank you!

**Kerrie Gallo, Director of
Ecological Programs
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bnriverkeeper.org