Spotlight on Lake Erie
Eastern Basin

Buffalo Niagara RIVERKEEPER

Great Lakes Legislative Caucus
September 26, 2015
Our Mission

Protect water quality and quantity for present and future generations while connecting people to water.
"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
Restoring Our Water Quality
Green Stormwater Management
Protecting our Living Infrastructure
Restoring Habitat for Fish & Wildlife
Enhancing Communities, Parks and Open Space
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.
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

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/18mile or contact Kerrie Gallo, Director of Ecological Programs, at (716) 852-7483 ext. 30 and Susan Kornsick, 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.
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

- 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

2011 Hurricane Irene (VT Route 100)
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
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

* Photo credits: WNY PRISM
Partnerships for Regional Invasive Species Management (PRISM)s

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.”

8 Regional PRISMs within NY

*Information courtesy of WNY PRISM
Key Finding #19

Combined Sewer Overflows are a Major Pollution Contributor

"...AND WHEN GENERAL MILLS IS MAKING CHEERIOS YOU CAN BARELY SMELL THE SEWAGE RUNOFF..."
### EPA 2012 Recreational Water Quality Criteria

<table>
<thead>
<tr>
<th>CRITERIA ELEMENTS</th>
<th>Recommendation 1</th>
<th>Recommendation 2</th>
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<tbody>
<tr>
<td>Indicator</td>
<td>GM (cfu/100 mL)</td>
<td>STV (cfu/100 mL)</td>
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<tr>
<td>Enterococci</td>
<td>35</td>
<td>130</td>
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<tr>
<td>(marine &amp; fresh)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>E. coli</em> (fresh)</td>
<td>126</td>
<td>410</td>
</tr>
</tbody>
</table>

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

![Bar chart showing E. coli monitoring results for different locations and months in 2014. The chart includes data for Cazenovia Park, Red Jacket Park, Canalside, Broderick Park, and Black Rock Canal Park. The x-axis represents locations, and the y-axis represents E. coli counts (cfu/100mL) with different colors for June, July, and August. A RWQC Value line is also shown.](image)
For each site, 5 samples were taken for the months of June, July and August 2014. Monthly Geometric Mean was calculated for each site. Results were compared to the 2012 USEPA Recreational Water Quality Criteria (RWQC) value of 126 cfu/100mL. Each column whose value extends above the red line, exceeds the recommended EPA threshold value for safe primary human contact with the water.
Combined Sewer Overflow

Cazenovia Creek
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)

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

“...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
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.
It’s ok to be a little edgy…
Thank you!

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