Samuel Myers Park – Implementing Restoration in the Direct Drainage Area of the Pike River Watershed

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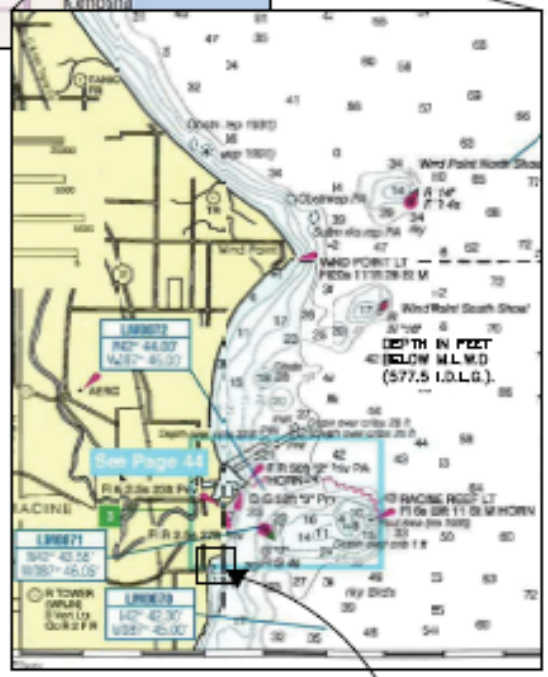
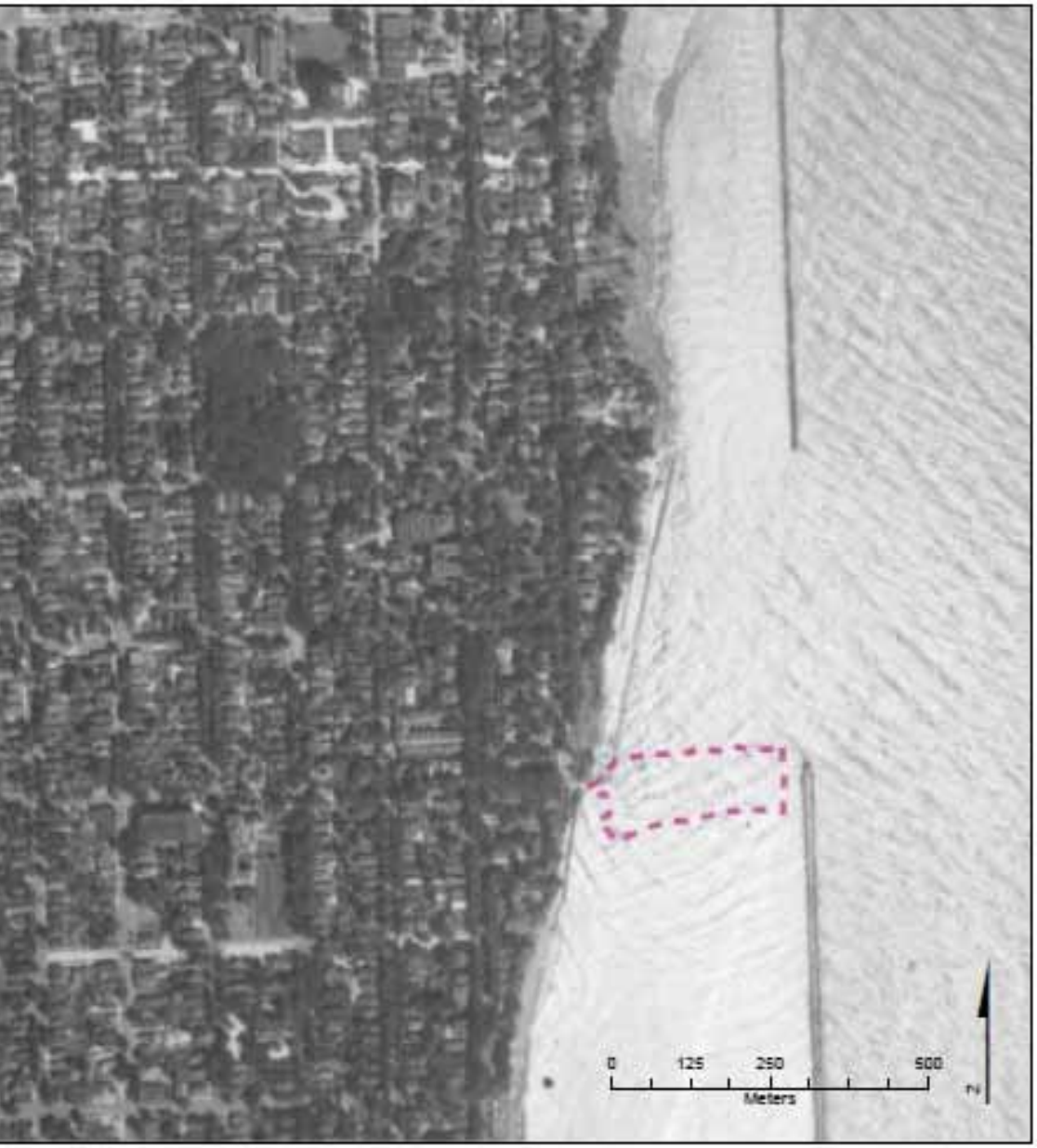
IL Lakes Management Association Annual Meeting – March 31, 2017

Samuel Myers Park – Racine, WI



BEACH LOCATION

1937 vs. 2014



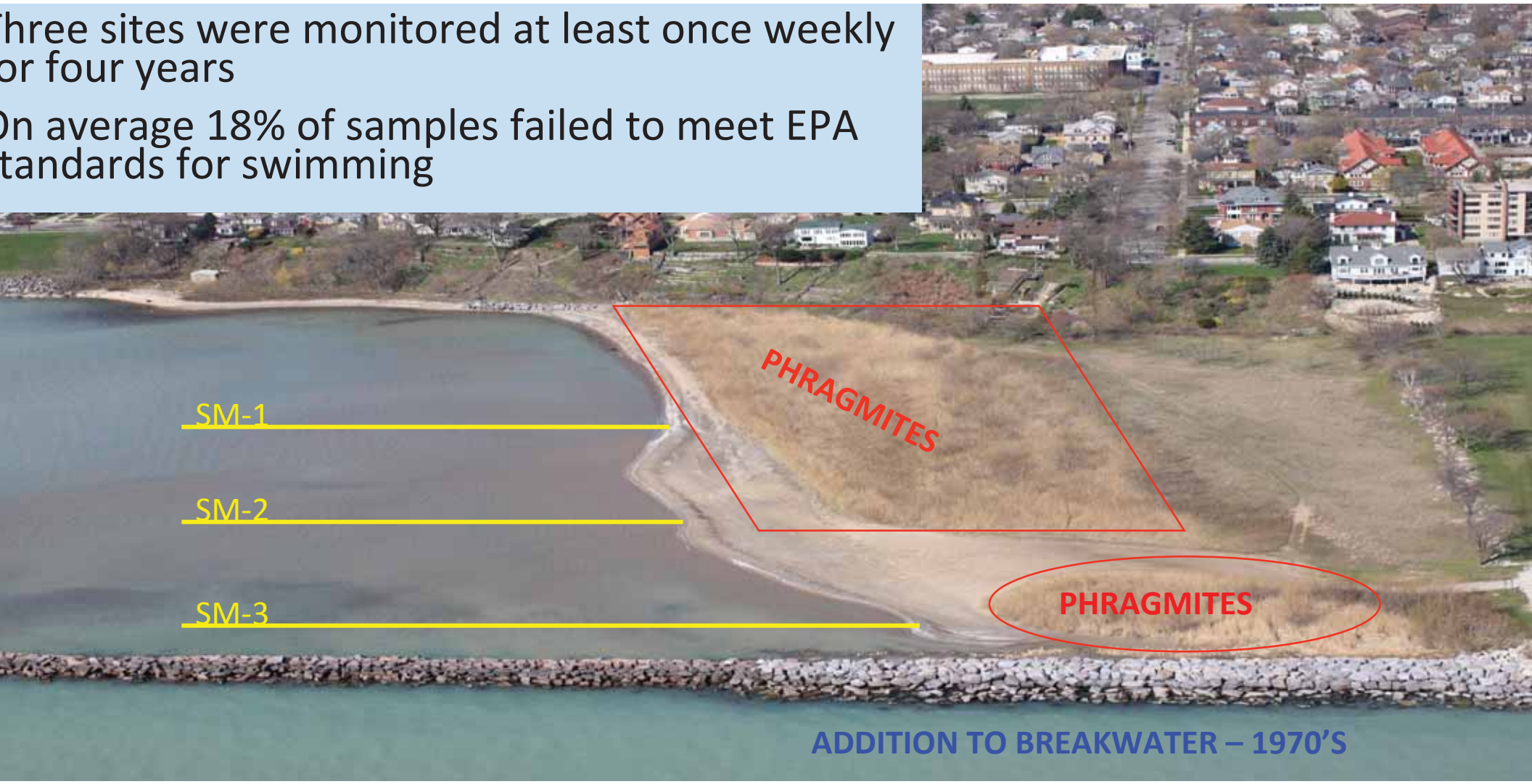
Prior to Restoration…

Phragmites & other invasive species

Lack of improved public access

urface Water Quality (2010-2013)

- hree sites were monitored at least once weekly or four years
- On average 18% of samples failed to meet EPA tandards for swimming



ources of Pollution Identified

Quality increased with distance from the shore and depth

- Shallow water had higher bacteria counts

High bacteria counts & nutrients in sediments close to the water's edg

Quality decreased when water was more turbid

Water quality was worse after rain

- Surface runoff across sand surface and down boat launch
- Stormwater discharge from municipal infrastructure into embayment

Stagnation near the breakwater negatively influenced water quality

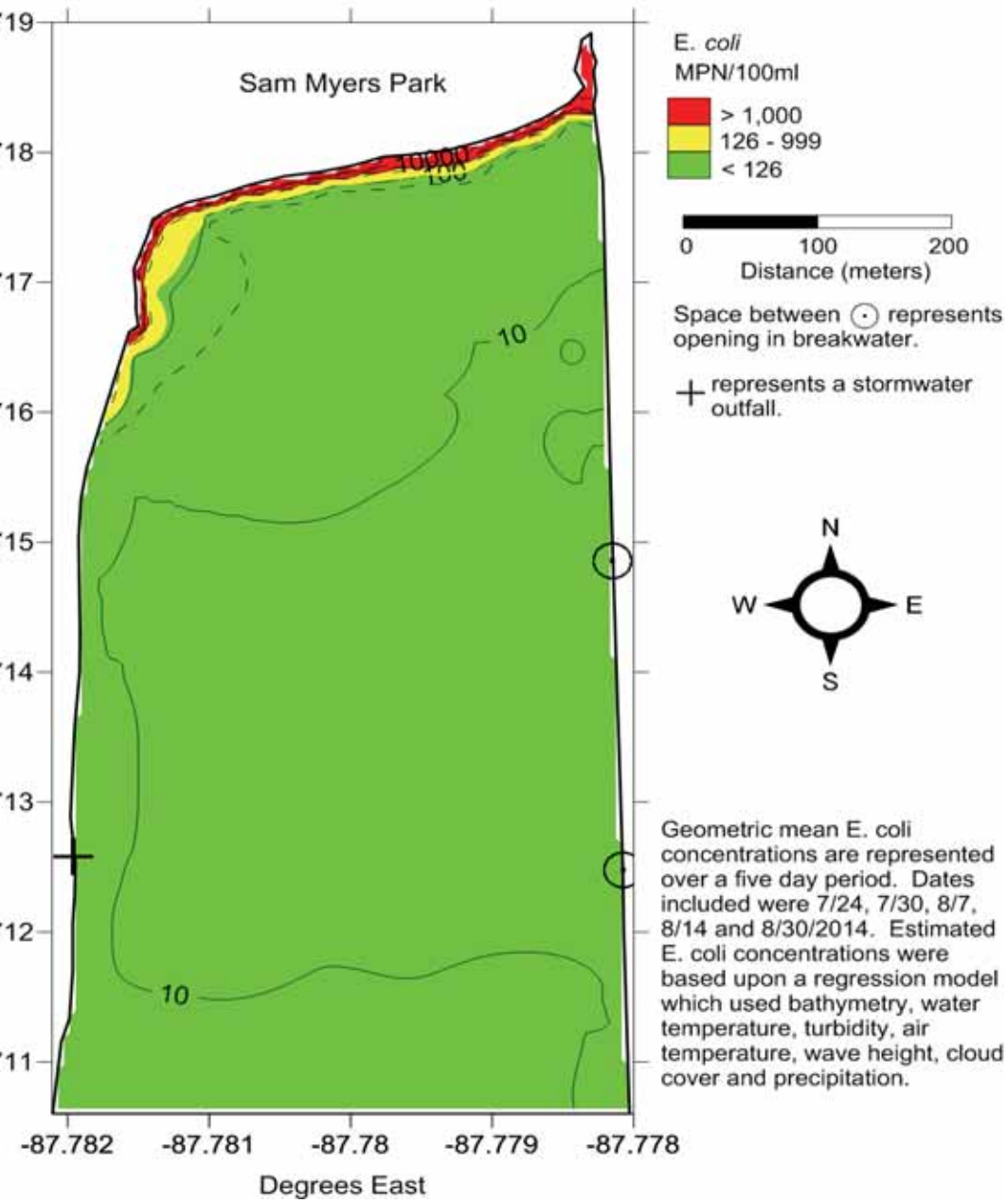
Gull and goose feces determined to be a potential source of pollution

Pollution Sources

Stagnation adjacent to breakwater

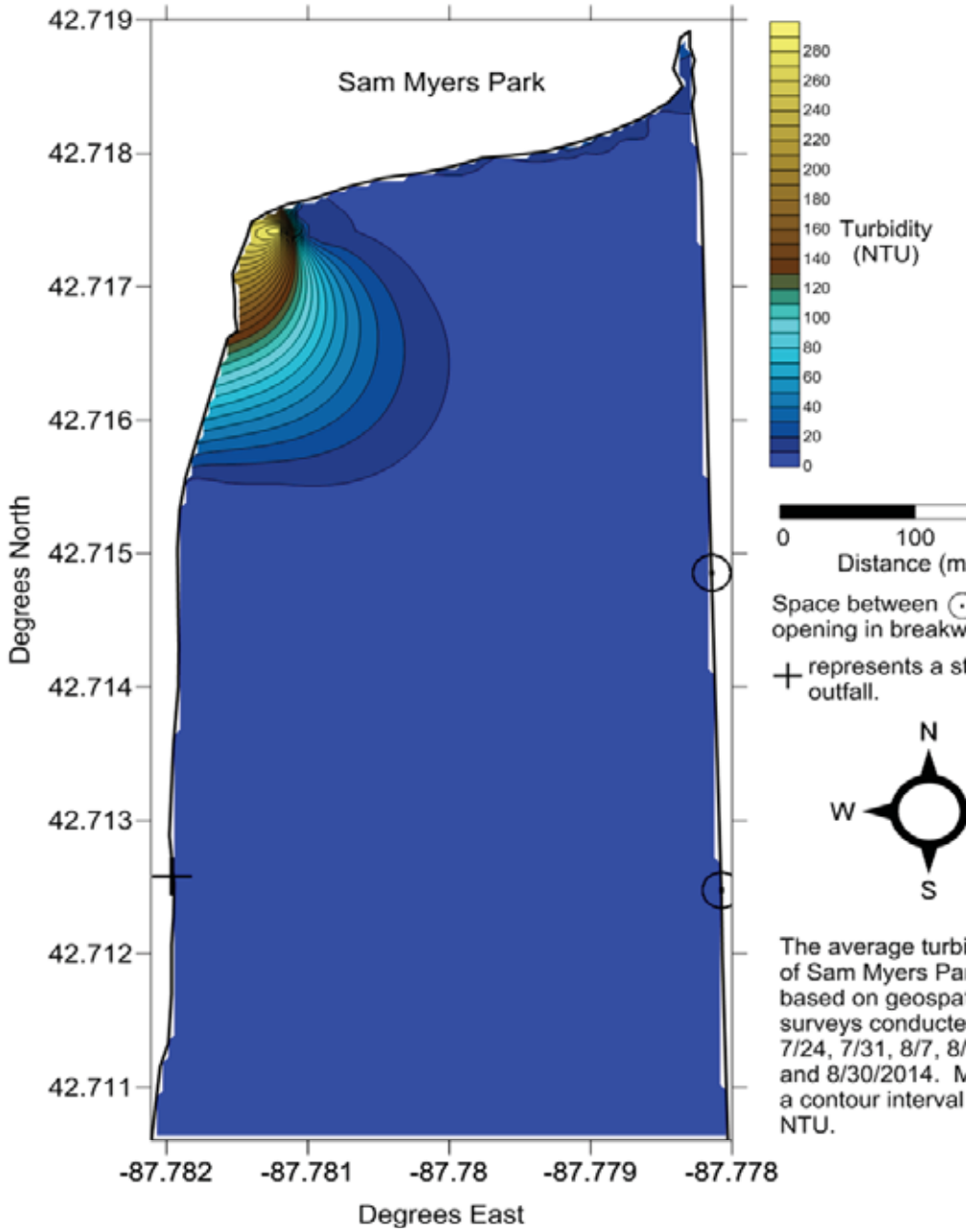
Invasive species & NPS Pollution

E. *coli* (5-day geometric mean)



Geometric mean E. coli concentrations are represented over a five day period. Dates included were 7/24, 7/30, 8/7, 8/14 and 8/30/2014. Estimated E. coli concentrations were based upon a regression model which used bathymetry, water temperature, turbidity, air temperature, wave height, cloud cover and precipitation.

Turbidity



The average turbi of Sam Myers Pa based on geospa surveys conducte 7/24, 7/31, 8/7, 8/ and 8/30/2014. M a contour interval NTU.

Restoration Approach

- Reduce direct stormwater runoff
- Prevent stagnation along the breakwater
- Maintain beach sands
- Deter loafing gulls and geese
- Remove and manage invasive species
- Restore coastal habitat (flora)
- Encourage native fauna (bird flyway)
- Improve public access
- Create recreational amenities
  - Including off-shore swim zone

Restoration Plan

nvasive Species Management

Controlled Burn

Herbicide Application & Cutting

ast Dune Feature and Jetty upplement

ast Wetland

ry Prairie Transition

est Constructed Wetland & Dune Features

Storm Damage – East Wetland (February 2016)

Active Storm Surge

Aftermath

mproving Resiliency (Sept 2016)

ncreased Size of Return to LM

“Pressure Relief Valve”

Upland

2013

2016 – In Progress

Native Upland Plants

Paper Birch & American Hornbeam

Others:

Red Twig Dogwood, Pussy Willow, Black
Chokeberry, Potentilla, Hackberry

Dry Prairie

2013

2016

Native Prairie Plants

Brown Eyed Susan

Little Blue Stem, Goldenrod, Aster

East Constructed Wetland

2013

2016

West Constructed Wetland

2013

2016

Existing Coastal Wetland

2011

2016

Native Wetland Plants

wamp Marigold, Arrowhead, Spike Rush

Joe Pye Weed

Dunes

2013

2016

Native Dune Plants

American Dune Grass & Evening Primrose

American Sea Rocket

State of WI Species of Special Concern

mproved Public Access

Gazebo

Scenic Overlook

mproved Public Access

Walking Trail – In Progress

Carry-In Canoe/Kayak Launch

Measures of Success

Restoration of Native Species

30,000 – 40,000 native species planted to date

52 native trees

Many additional native plants growing on their own from seed bank contained within the soil

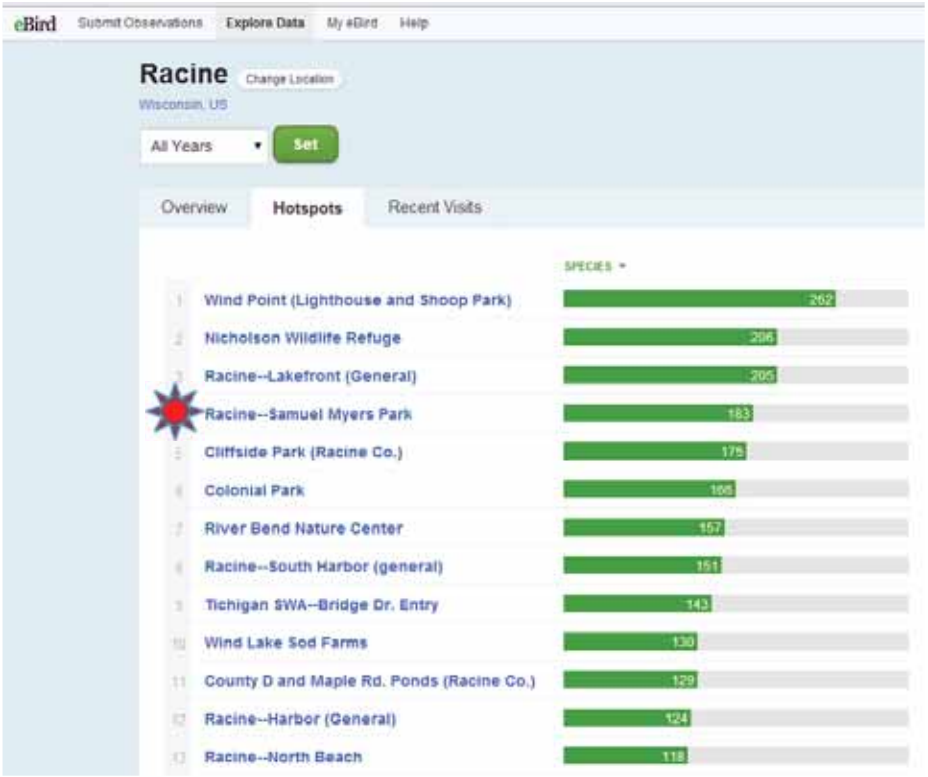
Invasive species management is ongoing

Migratory Birds & Other Wildlife

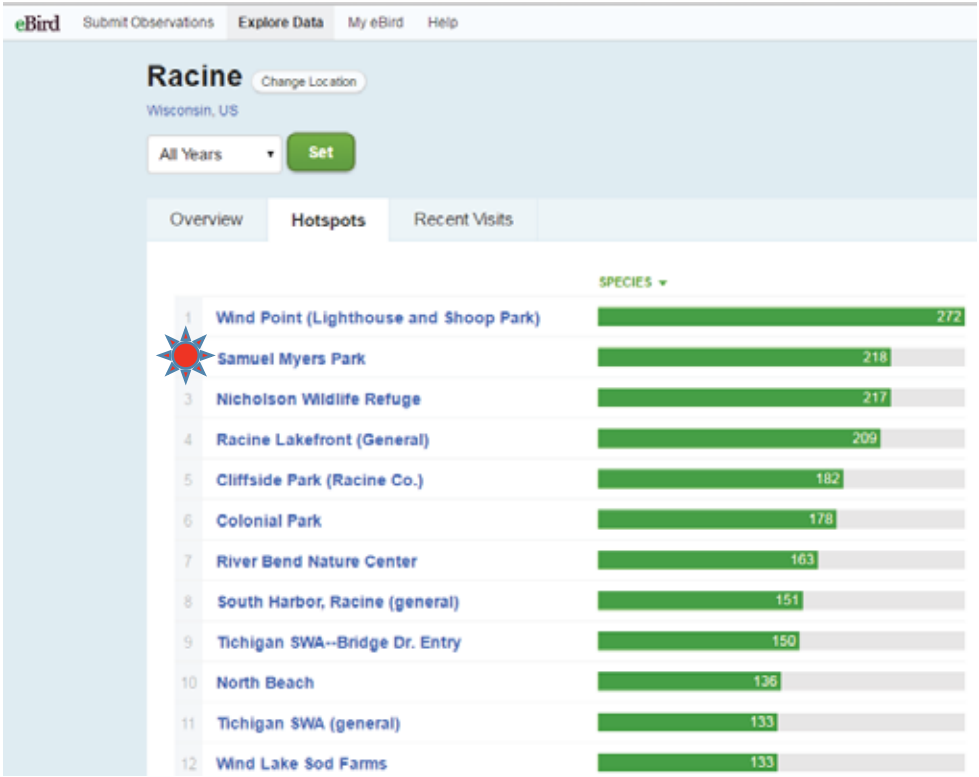
- Over 52 species sighted in a single day (Audubon "Big Sit")
- 35 more species seen since restoration began, e.g.
  - Eagle
  - Piping Plover
  - Egrets
  - Herons
- Mammals
  - Muskrat, Mink
- Toads, Frogs
- Dragonflies
- Monarch Butterflies

ncreased Migratory Bird Sightings

irding Hotspots - 2014



Birding Hotspots - 2016



mproved Water Quality

015 vs. 2016

Site	Year	Sample Depth (ft.)	n	Median *E. coli* (MPN)	Advisories	%
M-E2	2015	2	6	346.0	4	66.7
M-E2	2016	2	12	79.5	4	33.3
M-E3	2015	3	14	178.5	6	42.9
M-E3	2016	3	8	108.5	1	12.5
M-W2	2015	2	14	469.5	9	64.3
M-W2	2016	2	12	166.5	5	41.7
M-W3	2016	3	8	163.5	1	12.5

oal…Establish an offshore swim zone, aka “boater’s beach”

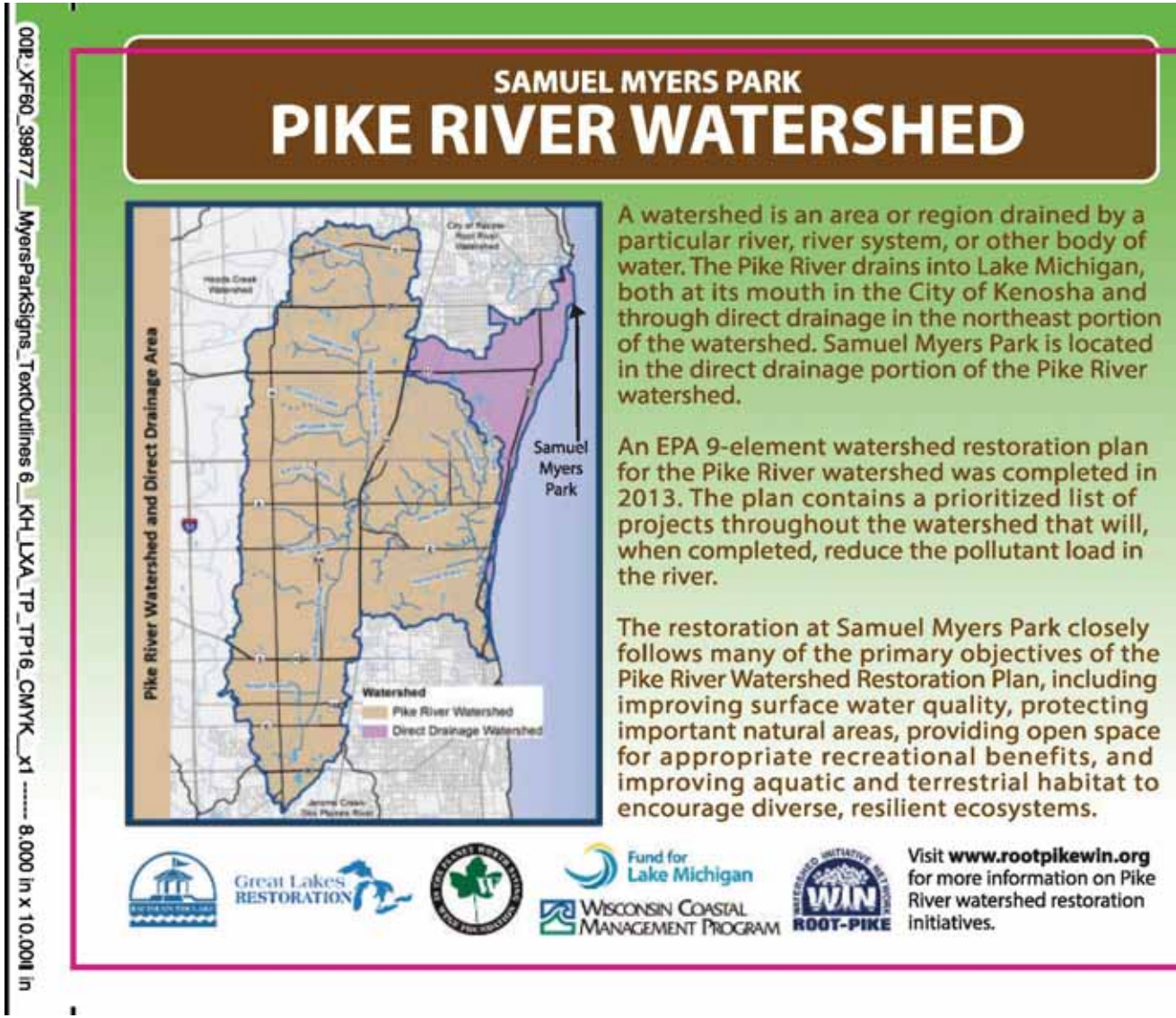
Prior to Restoration – NO SWIMMING

Education and Outreach

Educational Signage and Outdoor Classroom Space

Pike River Watershed Restoration Plan

- Preserving, protecting and improving the Pike River Watershed
- Fostering an appreciation and stewardship of the watershed through public education
- Protecting, enhancing and monitoring surface water quality to meet US EPA standards
- Identifying and protecting natural areas/ open space
- Providing passive recreational benefits
- Implementing storm water management BMPs within open space that help to reduce runoff
- Managing and maintaining existing natural depression storage, wetlands, streams and riparian areas
- Improving aquatic and terrestrial habitat to encourage balanced ecosystems
- Encouraging and supporting stakeholder efforts to implement watershed plan actions



Many Thanks to Our Supporters!!!!!!!!!

US EPA

Fund for Lake Michigan

WI Coastal Management Program

Root-Pike Watershed Initiative Network

Wege Foundation

Ozaukee Washington Land Trust

Racine Yacht Club

Miller Engineers & Scientists

- Kiwanis of Racine
- A.W. Oakes & Son
- Distinctive Woodwork, Inc.
- Vaash & Sons Excavating
- Friends of Myers Park
- Walden III Middle & High School
- UW-Parkside
- Alliance for the Great Lakes
- Our Stupendous Volunteers!!!

Time for a Few Questions…

Or you can email me: Julie.Kinzelman@cityofracine.org

Visit the Friends of Myers Park Facebook page:
https://www.facebook.com/Friends-of-Myers-Park-198608603679269/