Tonawanda Creek/Erie Canal Hydrilla Control Demonstration Project

Michael Greer
Regional Technical Specialist
Buffalo District

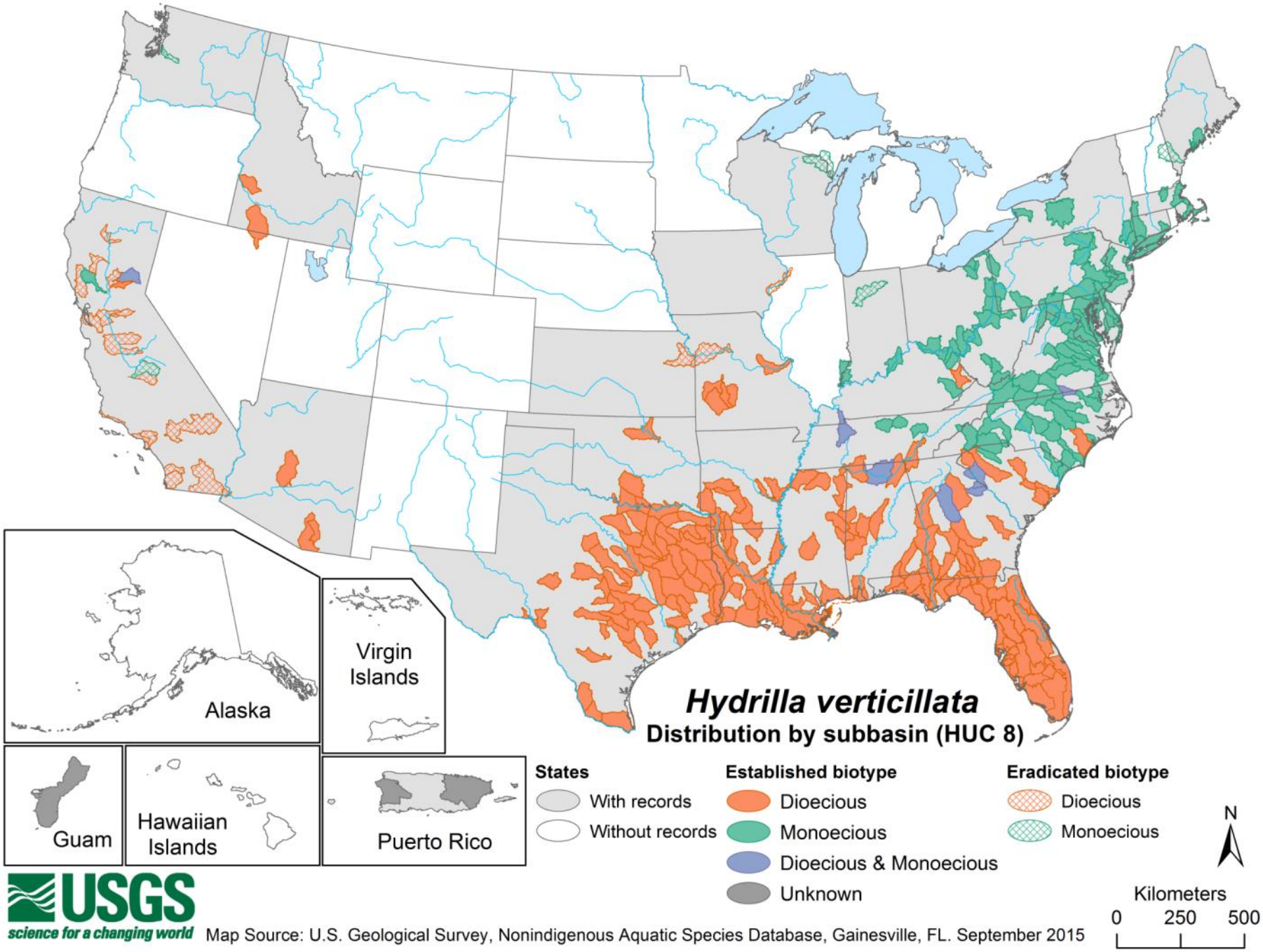
Michael Netherland
Research Biologist
Engineer Research Development Center

Richard Ruby
Buffalo District

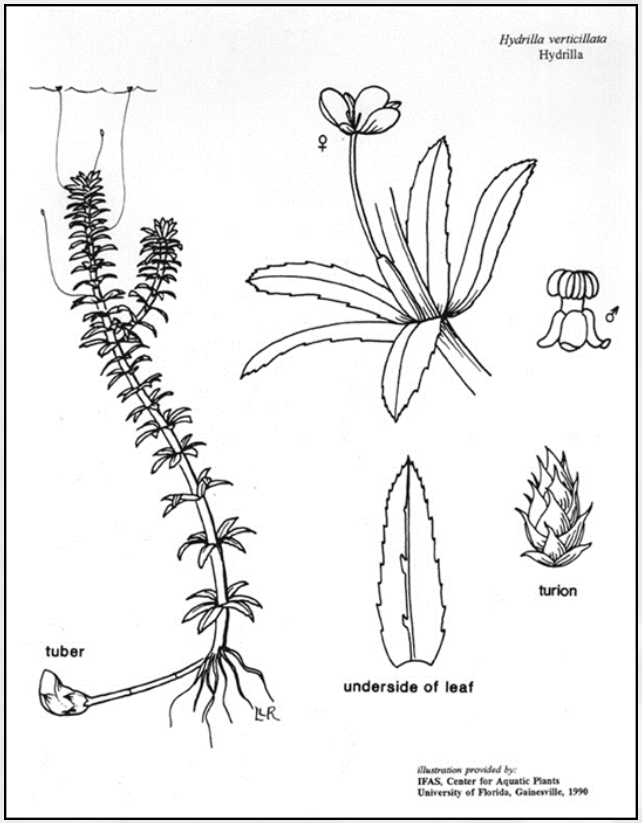
Dean Jones
University of Florida Center for Aquatic Invasive Plants

October 18, 2016

US Army Corps of Engineers
BUILDING STRONG®

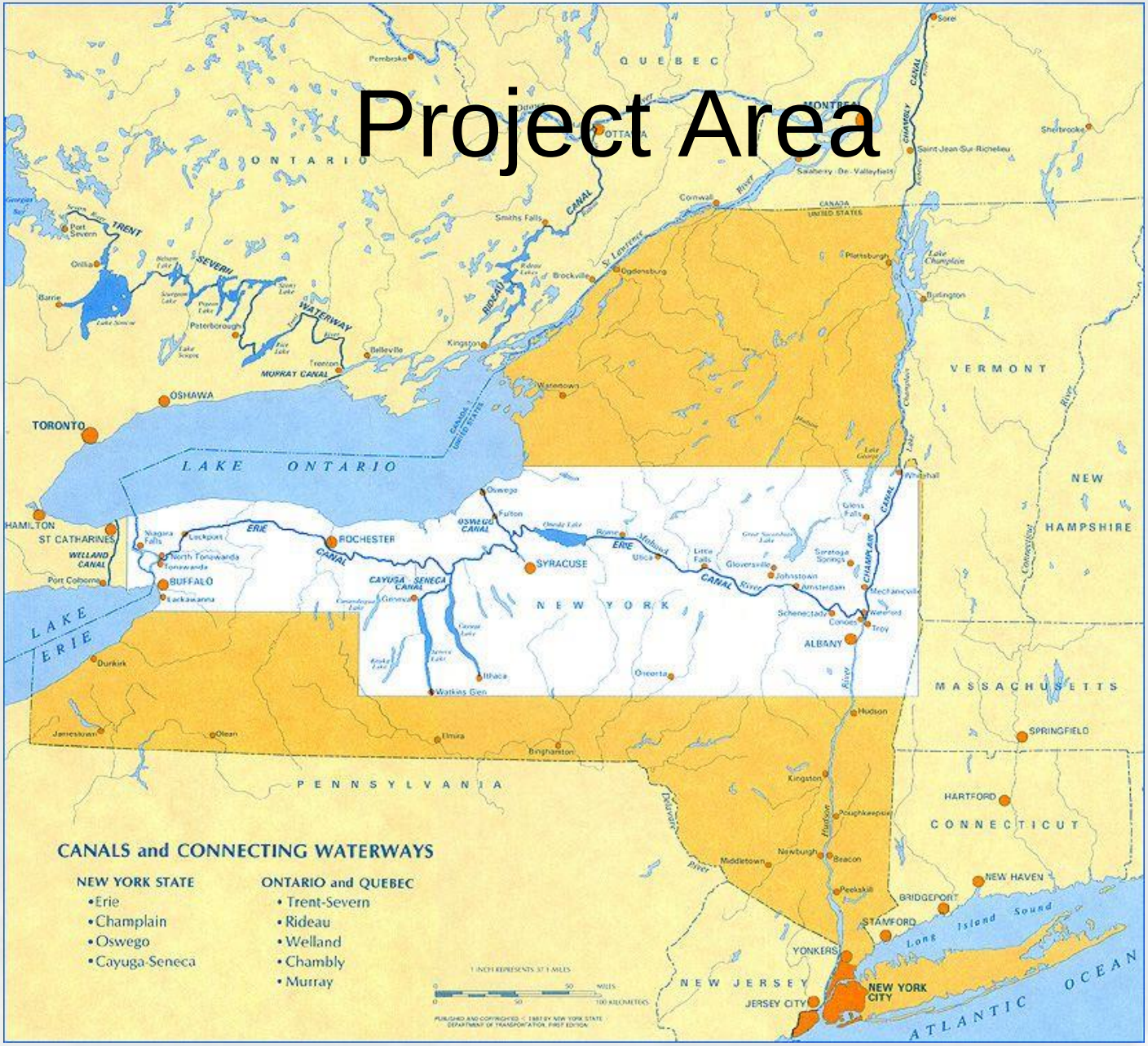

Alaska
Virgin Islands
Guam
Hawaiian Islands
Puerto Rico
Hydrilla verticillata
Distribution by subbasin (HUC 8)
States
With records
Without records
Established biotype
Dioecious
Monoecious
Dioecious & Monoecious
Unknown
Eradicated biotype
Dioecious
Monoecious
N
Kilometers
0 250 500
USGS
science for a changing world
Map Source: U.S. Geological Survey, Nonindigenous Aquatic Species Database, Gainesville, FL. September 2015

Hydrilla verticillata



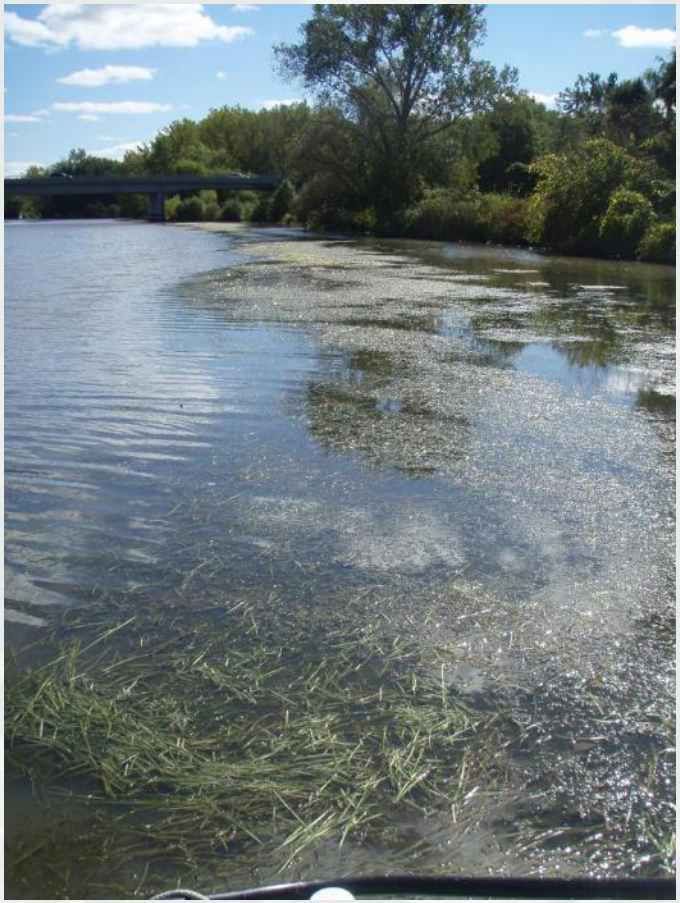
- Extensive point intercept sampling used to determine frequency and distribution
- Extensive sediment core samples used to determine size of tuber bank, sprouting, and new tuber production

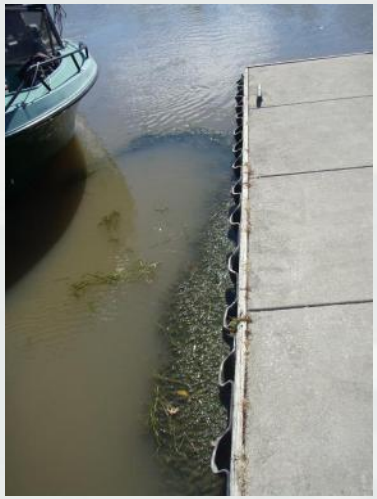
Project Area



(Erie Canal Website: http://www.eriecanal.org/index.html)

2014 Pre-treatment





Initial Response 2014

- Large scale application of endothall (Aquathol K™) across the project area in July
  - ~7 miles @ 1.5 mg/L
- Reapplication in western 2 miles of project area in September due to poor initial control

➢ Significant reduction in hydrilla biomass with the exception of the Service Dr. boat ramp reach (89% reduction in frequency, 90% reduction of tubers)

➢ Noticeable impact on native SAV

2015 Summary

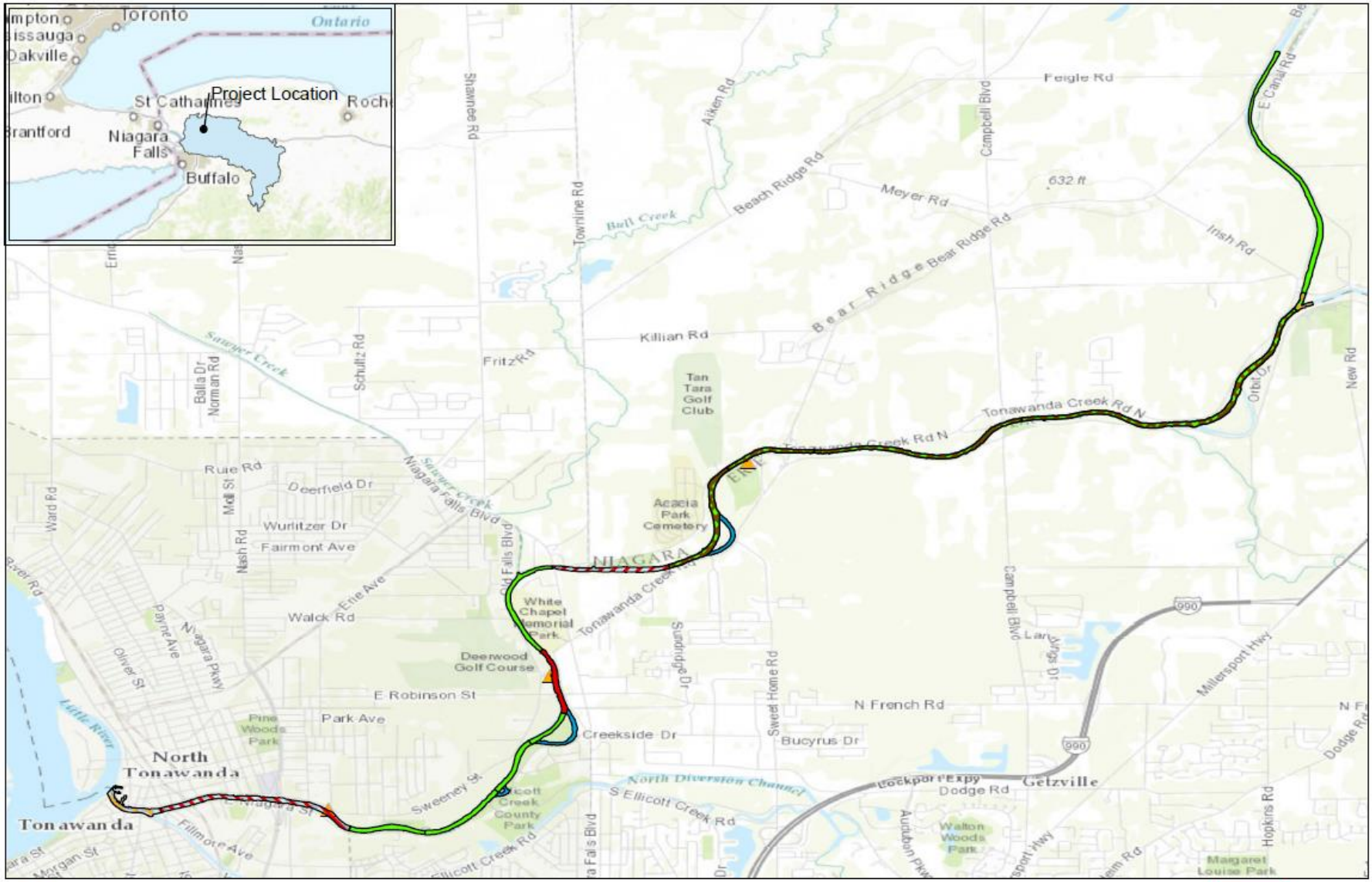
- Similar large scale application of endothall across the project area in July
- Reapplication in the western section 24 hrs later to increase contact time

➢ Significant reduction in hydrilla biomass including Service Dr. boat ramp reach (nearly 100% reduction in frequency, 98% reduction of tubers)

➢ Native SAV stabilized

➢ Located 1 patch outside of the project area near the confluence of the Niagara River

Hydrilla patch outside of main treatment area 8/25/15



Service Drive Ramp Treatment Area
Botanical Gardens Treatment Area
West Canal Marina Treatment Area
Potential Limnocorral Treatment Area
Potential Benthic Barrier Treatment Area
Secondary Treatment Area
OxbowTreatment Area
Loading Areas

Hydrilla Treatment Areas
July 2016

0 0.75 1.5 3 Miles

N

US Army Corps of Engineers
Buffalo District
BUILDING STRONG

Preliminary 2016 Results

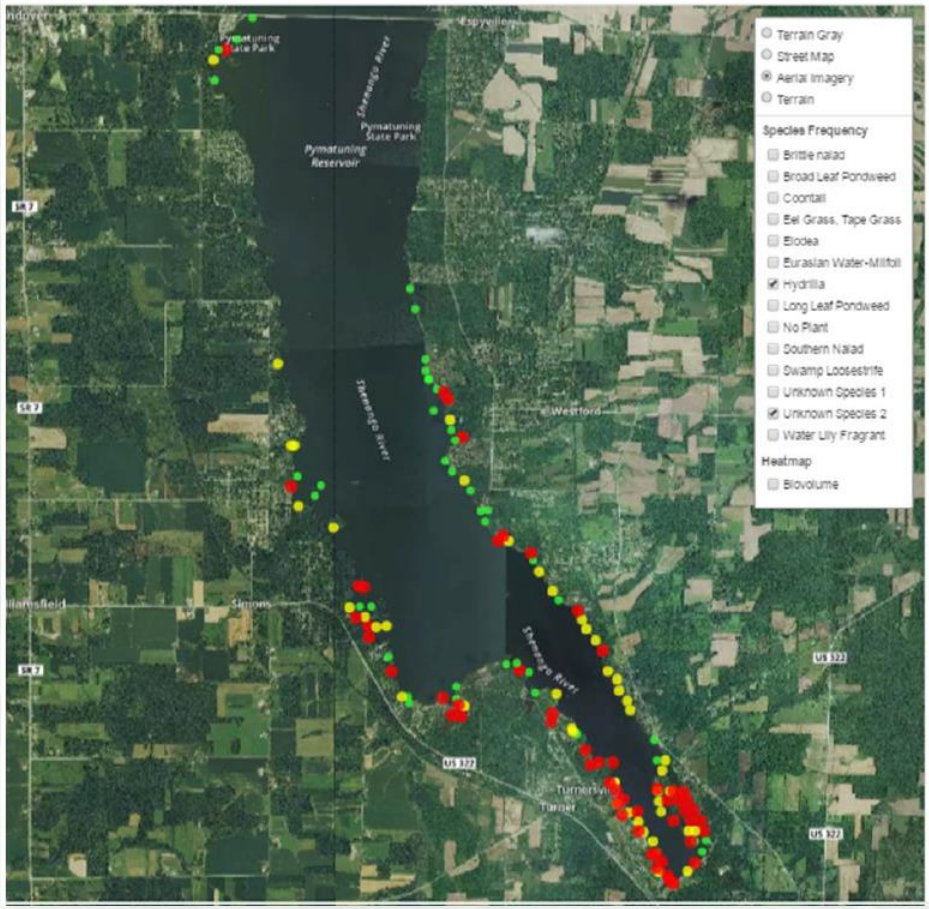
- Tuber population reduced by >99%
- Observed hydrilla frequency in August 0.01%
- ~50% reduction in the use of endothall
- Native SAV species continue to rebound
- Demonstrated efficacy of burlap as a benthic barrier

Concluding Thoughts

- With respect to monoecious hydrilla, we have many tools and techniques available to address infestations early
- Early detection and rapid response are key to successful control
- The biggest obstacle to rapid response is availability of $

Pymatuning Reservoir, OH/PA

2016 Hydrilla – Frequency 28.0%



2015 Hydrilla – Frequency 10.9%