GREAT LAKES HYDRILLA COLLABORATIVE

Great Lakes Panel on Aquatic Nuisance Species Plenary Session

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US Army Corps of Engineers®

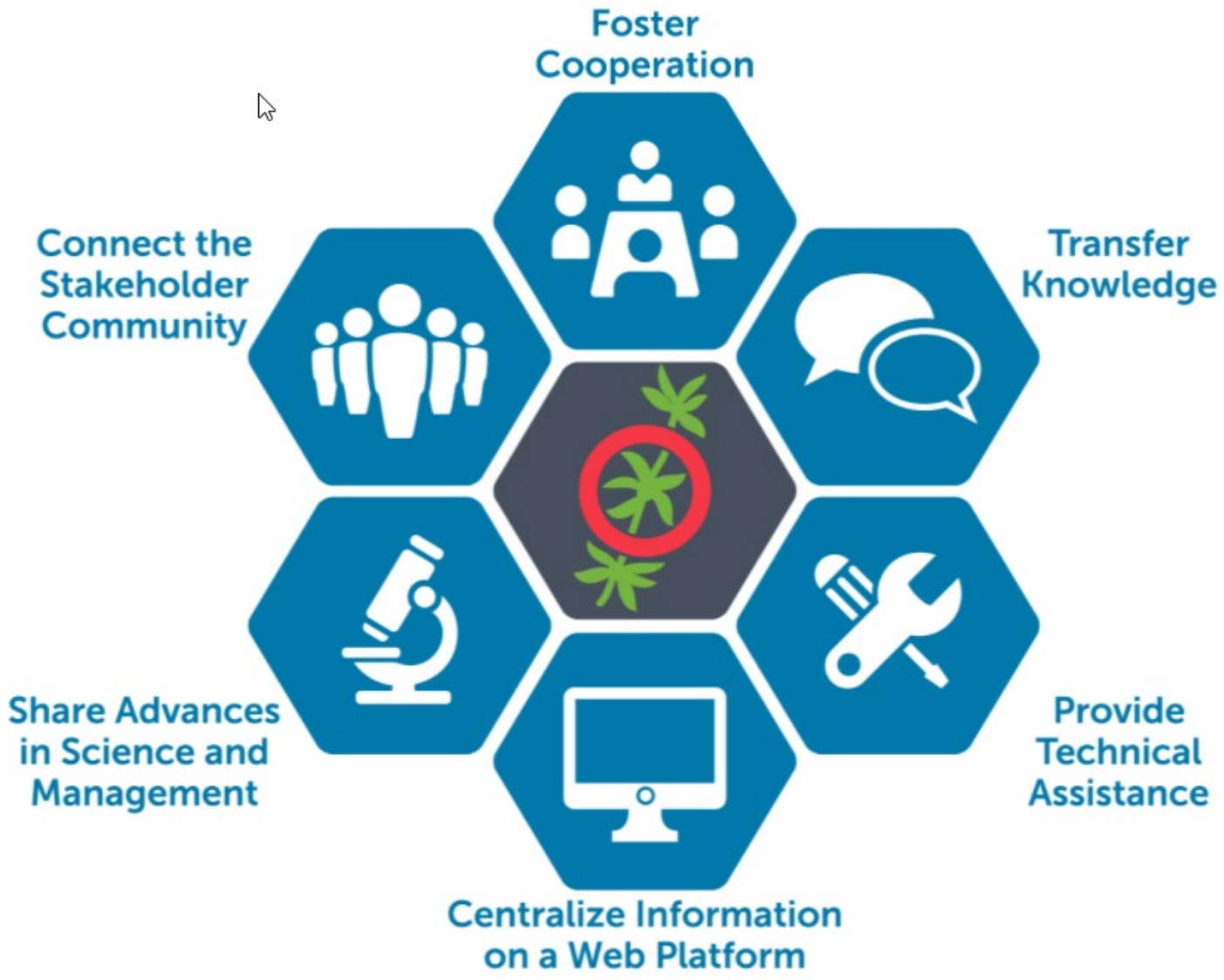
Authority: Aquatic Plant Control Research Program, Rivers and Harbors Act of 1958 (P.L. 85-500), as amended

Funding:

- Energy and Water (U.S. Army Corps of Engineers)
- Great Lakes Restoration Initiative (U.S. Environmental Protection Agency)

“Began” in 2012/2013 after hydrilla was found in Cayuga Lake near Ithaca, NY

PURPOSE OF THE COLLABORATIVE



ACCOMPLISHMENTS

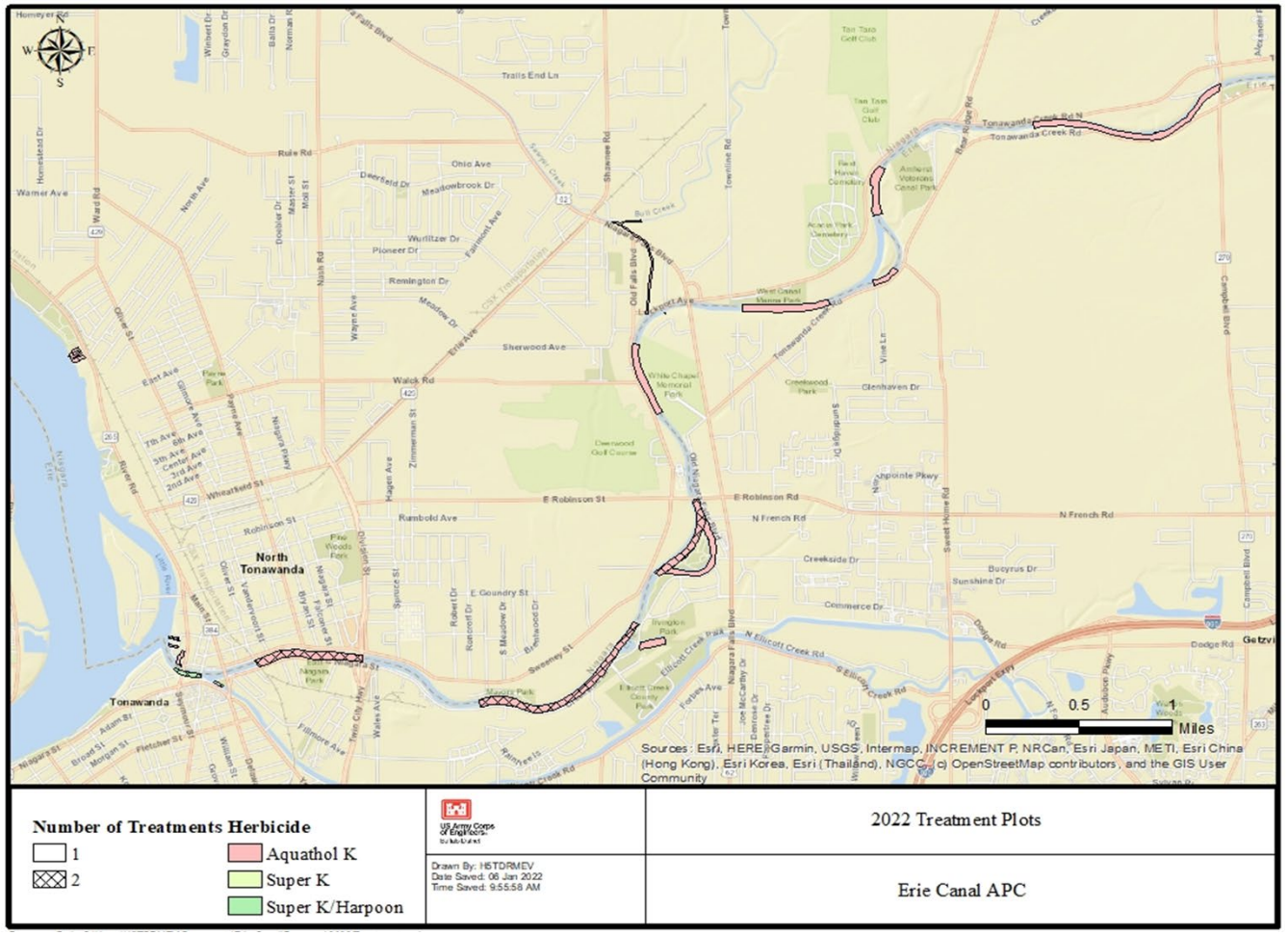
1. Web site to organize, share resources, and connect www.hydrillacollaborative.com
2. Three demonstration projects
   - Managing risk on over 500 acres of hydrilla a three sites to reduce risk and potentially eradicate hydrilla
   - Proving ground for innovative management approaches
   - Develop outreach and education material
3. Technical assistance
   - Shorten the response curve
   - Share lessons learned
4. Risk Assessment
   - Needed to better understand vulnerable areas and potential impacts

DEMONSTRATION PROJECTS

- Provide a mechanism to rapidly respond to infestations (control/risk mitigation)
- Investigate and document phenology of monoecious biotype
  - Documented synchronous sprouting of tubers at ≈ 20° C (late June/July)
  - Tuber formation late August
- Develop effective control methods
  - Innovative aquatic herbicide use patterns
    - Split treatments
    - Combination of aquatic herbicides
  - Benthic barriers
  - Leverage research

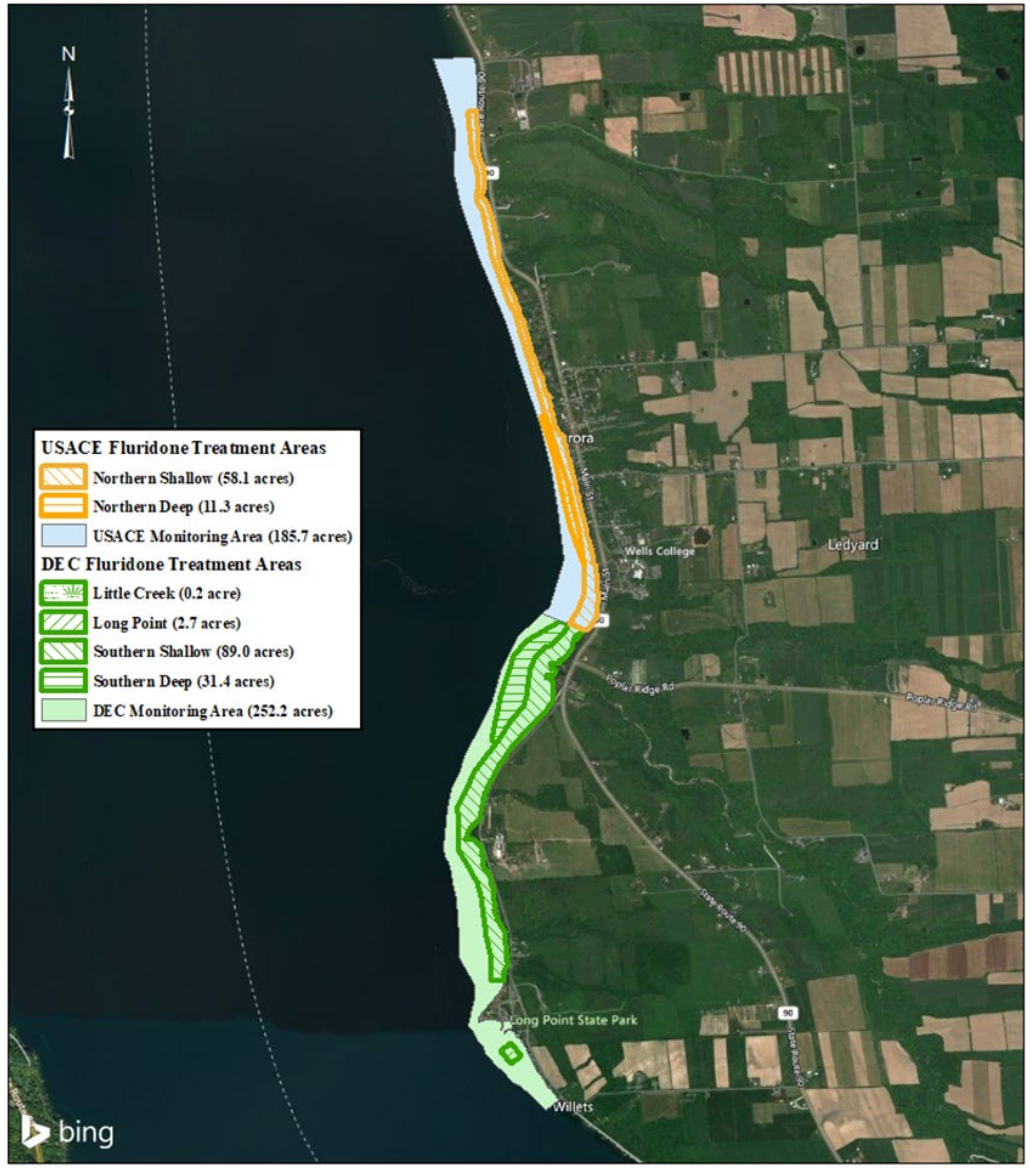
ERIE CANAL, NY (2013 – PRESENT)

- Approximately 120 acres treated annually
- Frequency reduced from ≈ 40% to 3%
- Primarily use Aquathol K
- Evaluating use of granular chelated copper and Aquathol Super K in very high water exchange areas



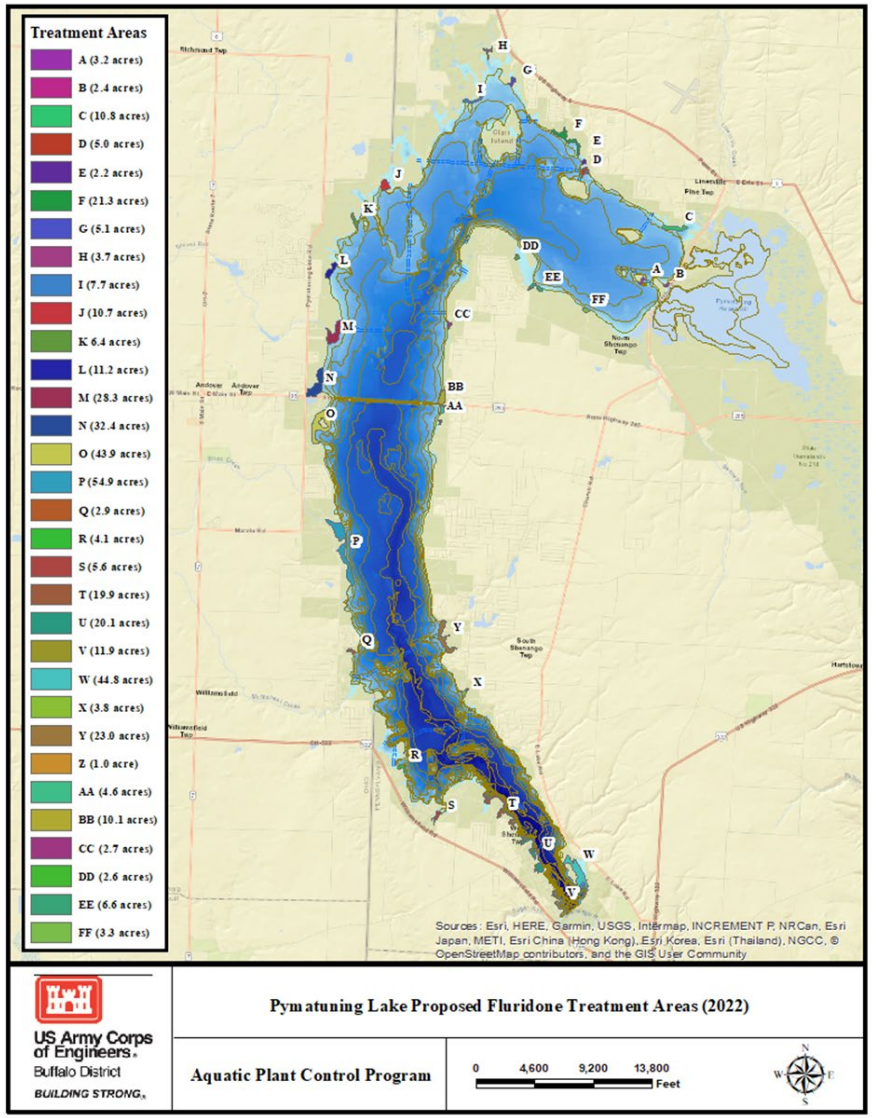
CAYUGA LAKE, NY

1. Aurora, NY (2015 – present)
- Over 400 acres monitored; 190 acres treated
- Frequency reduced from ≈ 60% to < 1% in managed areas
2. Ithaca, NY (2012 – 2017 technical support) (2019 – present)
- About 200 acres monitored; 83 acres treated
- No hydrilla was found in treatment plots in 2019 – 2021
- Primarily use Sonar H4C



PYMATUNING RESERVOIR, PA/OH

- Technical assistance 2014 – 2019, treatment 2020 – 2022
- Approximately 400 – 600 acres treated annually
- Developing cost effective management strategies to reduce the risk of spread that maintain ecological and economic benefits
- Primarily using Sonar One



GREAT LAKES HYDRILLA RISK ASSESSMENT

- Risk Assessment was completed to understand the potential for introduction and establishment of monoecious hydrilla and estimate the potential impacts from establishment
- Top 5 at risk watersheds: Southeastern Lake Ontario; St. Clair-Detroit; Western Lake Erie; Southern Lake Erie; Southwestern Lake Erie
- Potential economic loss in the Great Lakes associated with establishment in the basin range between $70 and $500 million annually

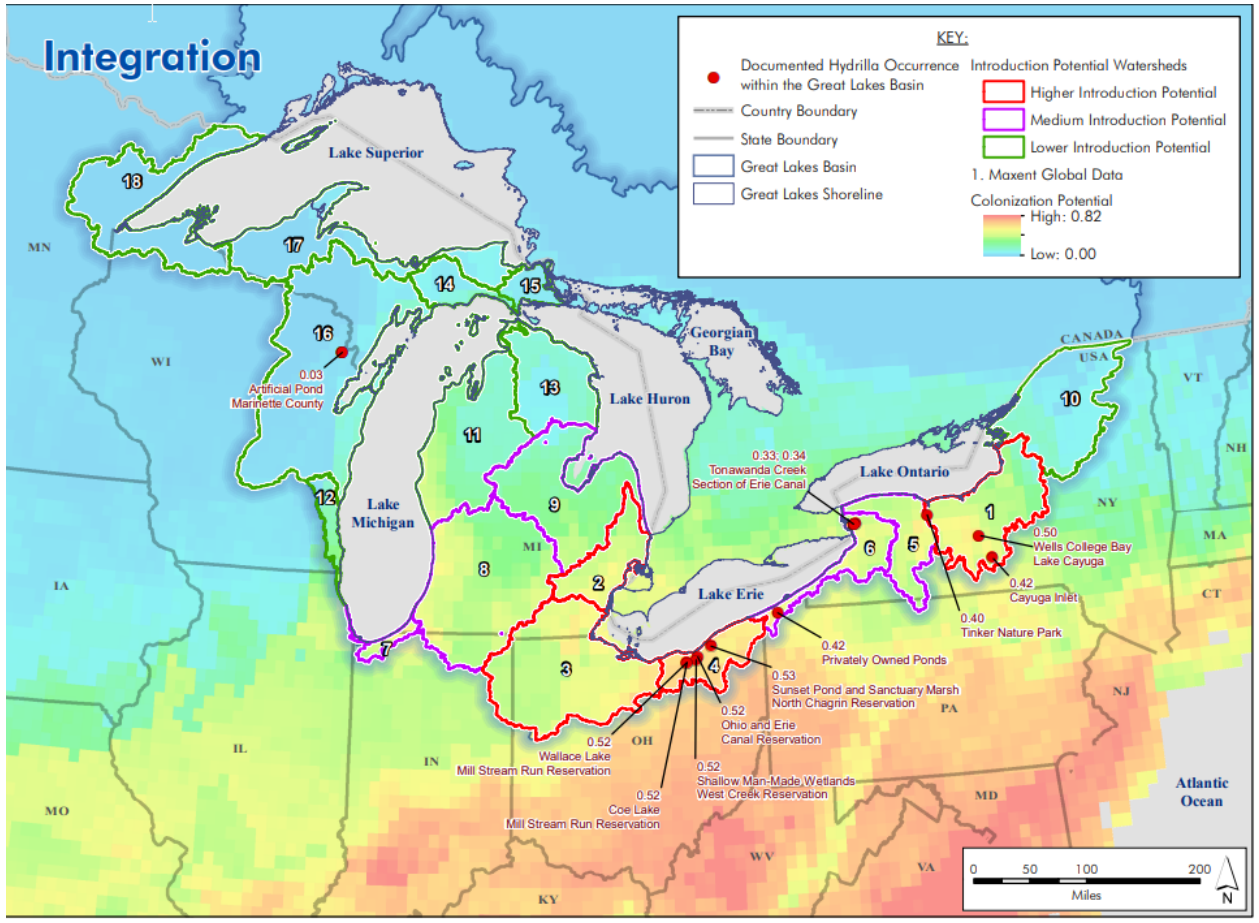


Figure SR-7 Integration of Maxent Model Results, Water-Depth and Water-Temperature Requirements, and Dispersal Model Results for Hydrilla

Occurrences as of 2/26/2016

THANK YOU TO OUR MANY PARTNERS AND COLLABORATORS

Great Lakes RESTORATION

NEW YORK STATE OF OPPORTUNITY Department of Environmental Conservation

DCNR pennsylvania DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

U.S. FISH & WILDLIFE SERVICE

CITY OF ITHACA, N.Y. INCORPORATED 1888

Village of AURORA TOWN OF LEDYARD, CAYUGA COUNTY, NY

Cayuga Lake Watershed Network

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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