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STATE OF
OPPORTUNITY

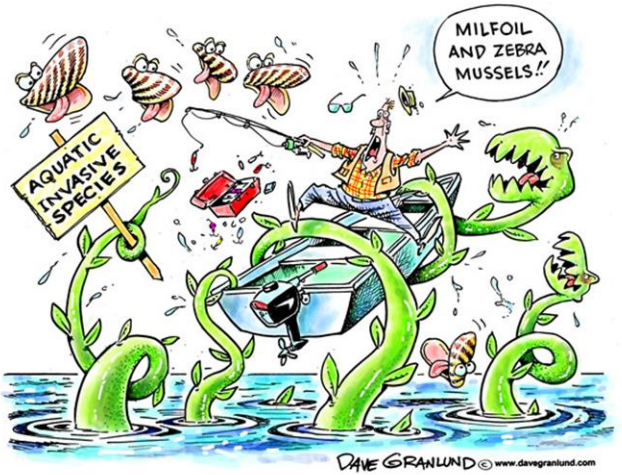
Department of
Environmental
Conservation

Aquatic Invasive Plant Management with a Focus on Hydrilla

Cayuga Lake Watershed Network
December 18, 2023

Methods for dealing with an invasive aquatic plants

Assuming that you've reported and received confirmation that a particular species is in your waterbody



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Key considerations for aquatic plant control

- Every site is different
- Adaptive management is essential for effective work
- Stakeholder outreach and education are the foundation
- Adjust expectations for a long-term investment of time, energy, and funds

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To control or not to control?

Invasive Plant Management Decision Analysis Tool

(IPMDAT)

http://www.ipmdat.org/

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Tools for Aquatic Plant Control

The “do nothing” option:

- Increase education and outreach to public
- Emphasize prevention
- Monitor aquatic plant growth and spread
- Accept reduction in recreational access and other impacts

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Tools for Aquatic Plant Control

Physical

Benthic mats

- Best under 1 acre area for limited time
- Non-selective
- Not suitable for flowing water

Mechanical harvesting

- Non-selective
- Biomass decomposition and disposal

Tools for Aquatic Plant Control

Physical

Hand pulling/Diver Assisted Suction Harvesting (DASH)/Harvesting

- Can have limited effectiveness for plants that reproduce through fragmentation
- Can impact water clarity and disturb sediment
- Can be costly
- May need a DEC General Permit if working in regulated wetlands

Tools for Aquatic Plant Control

Physical

Drawdowns

- Non-selective
- Challenging to do with larger water bodies
- Often conducted over winter

Dredging

Requires permit and approved disposal location

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Tools for Aquatic Plant Control

Biological

- Insects
  - Not many options approved by USDA APHIS
  - *Euhrychiopsis lecontei* beetles were recommended for Eurasian watermilfoil
- Triploid Grass Carp (Permit required)

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Tools for Aquatic Plant Control

Chemical

- Effective at low doses
- Selective
- Large infestations
- Can be cost effective
- Information about NYS regulated herbicides can be found in NYS Pesticide Administration Database (NYSPAD)

Process for using herbicides to control aquatic invasive plants

Can only be applied by a certified applicator in Category 5a or someone working under their supervision

Article 15 Part 327 Permit for Aquatic Pesticide (DEC) which requires riparian owner notification Note:

State Environmental Quality Review is needed for Article 15 (DEC)

State Pollution Discharge Elimination System (SPDES)/Notice of Intent (DEC)

Process for using herbicides to control aquatic invasive plants

Wetlands Permit (DEC) if in a regulated wetland

May need a Special Local Need Registration (SLN) to meet a specific pest problem in NYS (DEC)

FIFRA 2ee Permit- using herbicide on species not mentioned on label (DEC)

Any other permits as needed

Who issues which permits?

Article 15: DEC, Division of Materials Management, Bureau of Pest Management, Regional Offices (also does SEQR)

SPDES: DEC, Division of Water, Bureau of Water Permits

SLN (FIFRA 24c) and FIFRA 2ee: DEC, Division of Materials Management, Bureau of Pesticide Product Registration

General Permit for Management of Invasive Species: DEC Division of Fish and Wildlife, Bureau of Ecosystem Health

Who issues which permits?

Triploid Grass Carp Stocking Permit: DEC Division of Fish and Wildlife, Bureau of Fisheries (regional offices)

Article 24 Freshwater Wetlands – DEC Division of Fish & Wildlife, Bureau of Ecosystem Health

Dredging Permit – DEC Division of Environmental Permits

Requirements for treatment

- Article 15 aquatic pesticides permit application
- Requires downstream modeling
- Notification of riparian owners
- Signage about water use restrictions along public shoreline during treatment
- Requires water sampling and analysis to ensure maintenance of target concentration

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Additional management plan actions

- Pre-treatment and post-treatment surveys and monitoring as appropriate (aquatic plants, macroinvertebrates, vertebrates)
- Dissolved oxygen monitoring within and outside of infestation pre- and post-treatment
- Education and outreach pre-season, during season, and post-season as interest dictates
- Review of data and revision of plans for next season if needed (adaptive management)

Case Study: Hydrilla

- Federally listed Noxious Weed
- Prohibited in New York,

  6 NYCRR Part 575
- NYSDEC focus on large-scale projects protecting watersheds

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Hydrilla in New York

First discovered in 2008

2008 - Creamery Pond, Orange County

2008 – Sans Souci Lake, Lotus Lake, Suffolk County

2009 - Lake Ronkonkoma, Blydenburgh/New Mill Pond, Phillips Mill Pond, Suffolk County

2009 – Frost Mill Pond, Suffolk County

2011- Smith Pond, Great Patchoque Lake, Suffolk County; Cayuga Inlet, Tompkins County

2012 – several private ponds, Broome County

2011 – Cayuga Lake, Tompkins County;

2012 - Erie Canal, Niagara and Erie Counties

2013 – Croton River, Westchester County

2013 – Millers Pond, Suffolk County; Unnamed pond, Tioga County

2014 – New Croton Reservoir, Westchester County

2014 – Prospect Park, Brooklyn, Kings County

2015 – Tinker Nature Park pond, Monroe County

2016 – Aurora (Cayuga Lake), Tompkins County

2016 – Spencer Pond and Kuhlman Pond, Tioga County

2016 – Halsey Neck Road pond, Suffolk County

2018 - King Ferry, Cayuga County

2018 – Green and Hickory Lakes, Erie County

2019 – Lansing, Tompkins County

2021 – Niagara River, Niagara County

2021 - Return of Creamery Pond, Orange County

2022 – Sebago Lake, Harriman State Park, Rockland County

2023 – Upper Susquehanna River, Tioga County

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Management Options in Place

1) No management

2) Dredging

3) Grass Carp

4) Combination (IPM)

5) Herbicide

Option: No management

Suffolk County:

- Lake Ronkonkoma (10 acres of 240 acres)
- Sans Souci (southern 5 acres)
- Lotus Lake (13 acres)
- Blydenburgh/New Mill Pond
- Phillips Mill Pond
- Great Patchogue Lake
- Smith Pond
- Millers Pond
- Prospect Park Lake

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Option: No management

Broome County:

- Several private ponds

Kings County:

- Prospect Park pond

Option: Dredging

- Private marina in King Ferry (Cayuga County) in March 2019

- Hydrilla has not returned

Option: Grass carp

Nassau County:

- Frost Mill Pond (private)

The Pond and Lake Connection

Option: Combination (Integrated Pest Management)

Monroe County: benthic mats + grass carp (now switching to only herbicide)

Orange County: herbicide + grass carp (now switching to only herbicide)

Option: Herbicide

Cayuga County, Seneca County,Tompkins County:

Cayuga Lake

Erie/Niagara Counties:

Erie Canal

~~Green and Hickory Lakes~~

Niagara River

Tioga County:

Spencer Pond, Little Nanticoke Creek, Upper Susquehanna River

Westchester County:

~~Croton-on-Hudson~~

New Croton Reservoir

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Option

Tompkins County:

Aurora (central Cayuga Lake)- fluoridone pellets + copper

Tioga County:

Spencer Pond/Little Nanticoke Creek – fluoridone pellets

Suffolk County:

Halsey Neck Road Pond- endothall

Cayuga, Seneca, and Tompkins Counties: Cayuga Lake:

- Pre-treatment, mid-season and post-treatment aquatic plant surveys
- Tuber density monitoring
- Fluoridone (liquid and pellet)
- Chelated copper spot treatments
- Endothall

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Westchester County: Croton-on-Hudson Completed 2022

- Pre-and post treatment aquatic plant surveys
- Tuber density monitoring
- Liquid fluridone treatment
  - 2-4 ppb concentration
  - 60-120 days
  - June – October
- Drinking water monitoring
  - 4 – 8 locations
  - analysis detection limit .30 ppb

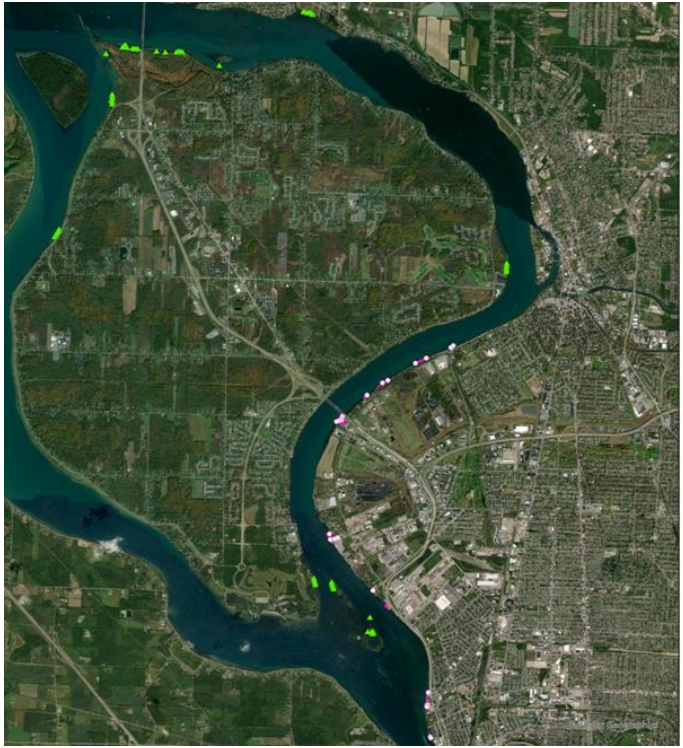
Erie and Niagara Counties: Erie Canal

- Eastern portion now led by NYSDEC Region 9
- 2023: endothall (1.5 ppm) and pilot florpyrauxifen-benzyl treatment (50 ppb)
- 2024: liquid fluoridone injection and florpyrauxifen-benzyl (with spot treatment of fluoridone pellets)

Niagara River

- Combination fluoridone pellets, chelated copper and endothall

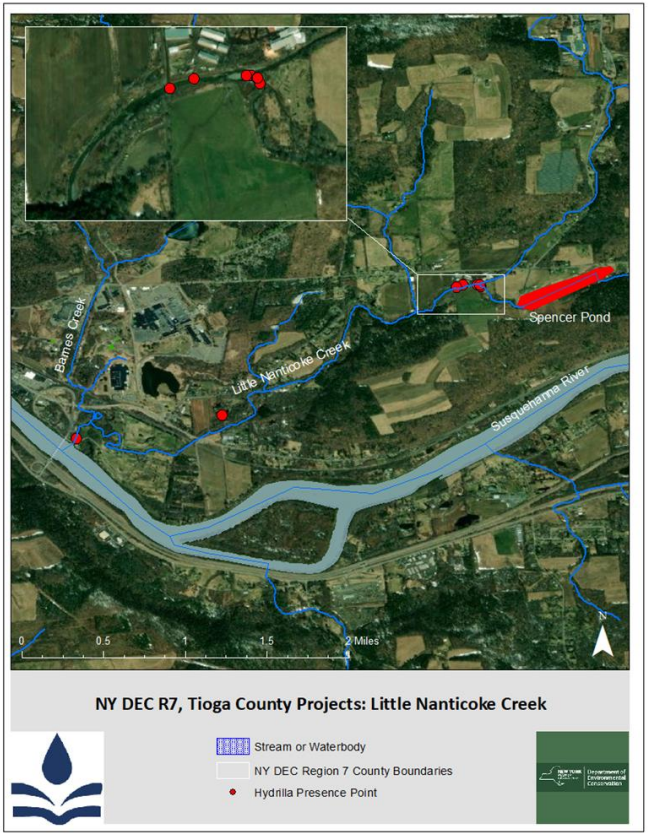
- Six known locations
  - Wardell Boat Yard (Niagara side)
  - Lumberjack Marina
  - Gratwick Park
  - East Pier
  - The Shore Waterfront
  - Winfield Marina



Tioga County

- 10-week of fluoridone pellet treatment with some spot treatments

- 2023 find in Upper Susquehanna River was hand pulled (36 lbs). Will likely be treated with fluoridone pellets or dredged.



Prevention

Protect Your Waters and Clean Drain Dry messaging

Watercraft Inspection Steward Program

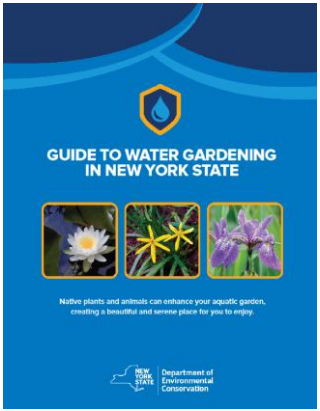
Organisms In Trade (OIT) Education and Outreach

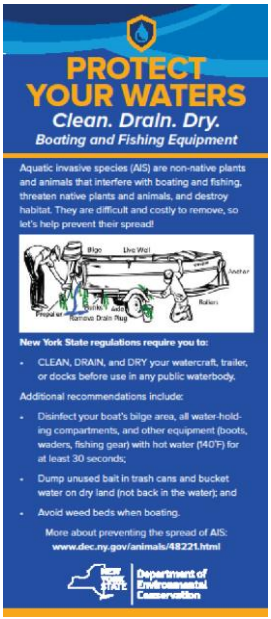
thetelegraph.co.uk

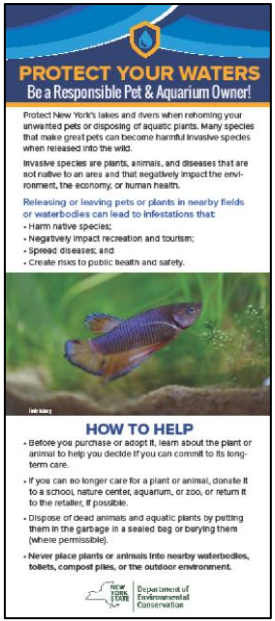
Protect Your Waters

Target Audiences:

- Aquatic recreationists
- Aquaria and pet owners
- Aquatic gardeners
- Life releases







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Prevention: Watercraft Inspection Steward Program

- Statewide AIS spread prevention grants

- > 250 locations
- > 215,000 boat inspections

- Supports NYCRR Part 576 and NYS AIS Management Plan

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Prevention: Organisms in Trade

- Aquatic gardening
- Aquaria/Hobbyists
- Bait Sales
- School classrooms/labs
- Lab suppliers
- Live markets
- Life Releases

Detection and Response

Chris Doyle, Allied Biological

- NYS rapid response policy
- NYSDEC Bureau of Invasive Species and Ecosystem Health (BISEH)
- Partnerships for Regional Invasive Species Management (PRISMs)
- NYS OPRHP (Parks) Invasive Species Strike Team
- NYSDEC BISEH Regional Staff
- NYSDEC staff certified applicators in Category 5A

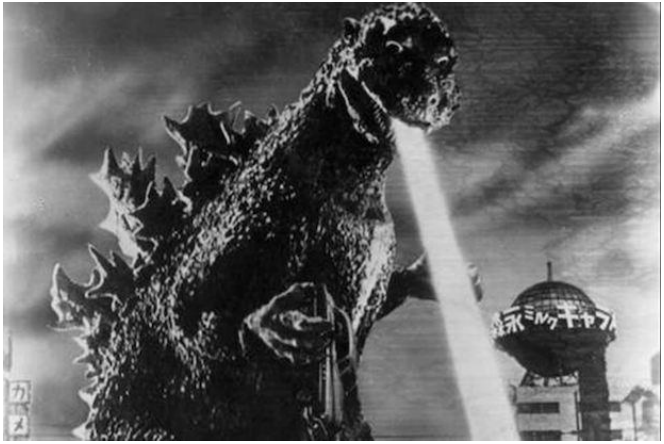
Future Plans

- Re-assessment of management methods for smaller infestations (Suffolk County in particular)

- Continued focus on prevention and early detection and raising public awareness

www.wikipedia.org

Future Plans



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- Remaining flexible regarding control methods
- Continued communication across state and international borders
- Focus on adaptive management

Acknowledgments

USACE

USFWS

FL PRISM

WNY PRISM

Cayuga Lake Watershed Network

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