



**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



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

To control or not to control?

Invasive Plant Management Decision Analysis Tool (IPMDAT)

<http://www.ipmdat.org/>

INVASIVE PLANT MANAGEMENT
IPMDAT
DECISION ANALYSIS TOOL

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Get Started!

To Control or Not to Control? It's a Difficult Question.

The **Invasive Plant Management Decision Analysis Tool (IPMDAT)** helps natural resource managers to determine if an invasive plant control project is likely to be successful and if it warrants an investment of their agency's or organizations resources.

To justify spending resources on an invasive plant control project:

- The invasive species must cause serious environmental or economic harm or harm to human health.
- The project should be feasible.
- The project should give a good return on the investment of resources.

In practice, it is often difficult to decide if all these criteria are met. The IPMDAT helps guide the decision to control or not to control. Using this tool makes decisions on invasive plant control more transparent, understandable, and fully documented and ensures that resources will be used effectively.

What is the IPMDAT?

The IPMDAT is comprised of four steps and takes approximately two hours to complete. The first step is entering in project background information, include project goals and objectives. Secondly, the user determines if the impact or harm caused by an invasive plant warrants control and selects appropriate control strategy based on the plant's abundance and distribution.

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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



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



B. Johnson

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



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



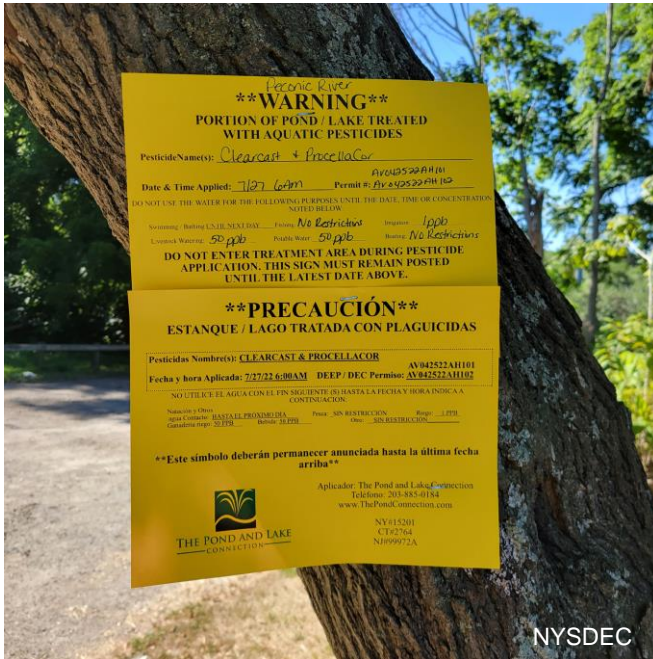
Who issues which permits?

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



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

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



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

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



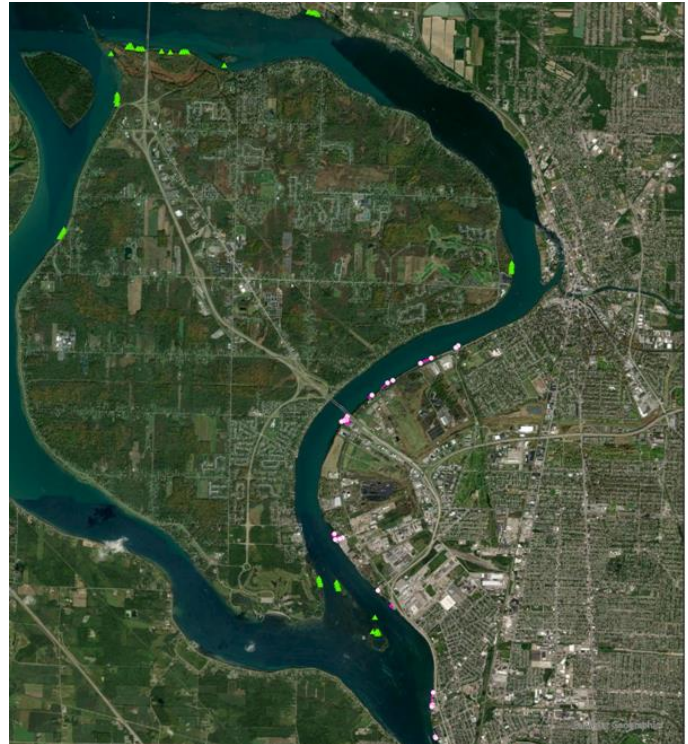
Erie and Niagara Counties: Erie Canal

- 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

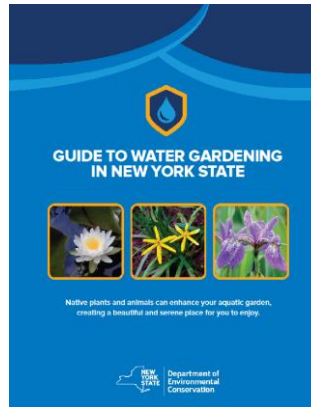


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Protect Your Waters

Target Audiences:

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



PROTECT YOUR WATERS
Clean, Drain, Dry.
Boating and Fishing Equipment

Aquatic invasive species (AIS) are non-native plants and animals that interfere with boating and fishing, threaten native plants and animals, and destroy habitat. They are difficult and costly to remove, so let's help prevent their spread!


New York State regulations require you to:

- CLEAN, DRAIN, and DRY your watercraft, trailer, or docks before use in any public waterbody.

Additional recommendations include:

- Disinfect your boat's bilge area, all water-holding compartments, and other equipment (boots, waders, fishing gear) with hot water (140°F) for at least 30 seconds;
- Dump unused bait in trash cans and bucket water on dry land (not back in the water); and
- Avoid weed beds when boating.

More about preventing the spread of AIS:
www.dec.ny.gov/animals/48221.html

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PROTECT YOUR WATERS
Be a Responsible Pet & Aquarium Owner!

Protect New York's lakes and rivers when rehoming your unwanted pets or disposing of aquatic plants. Many species that make great pets can become harmful invasive species when released into the wild.


Invasive species are plants, animals, and diseases that are not native to an area and that negatively impact the environment, the economy, or human health.

Releasing or leaving pets or plants in nearby fields or waterbodies can lead to infestations that:

- Harm native species;
- Negatively impact recreation and tourism;
- Spread diseases; and
- Create risks to public health and safety.

HOW TO HELP

- Before you purchase or adopt it, learn about the plant or animal to help you decide if you can commit to its long-term care.
- If you can no longer care for a plant or animal, donate it to a school, nature center, aquarium, or zoo, or return it to the retailer, if possible.
- Dispose of dead animals and aquatic plants by putting them in the garbage in a sealed bag or burying them (where permissible).
- Never place plants or animals into nearby waterbodies, toilets, compost piles, or the outdoor environment.

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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



J. Clayton, NYSDEC

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



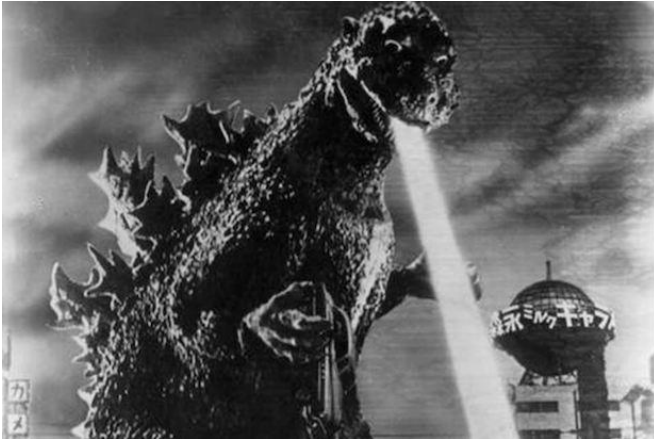
Future Plans

- 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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