Management Of Invasive Aquatic/Wetland Plants

Top 6 most detrimental species to aquatic/wetland ecosystems

Based on information available in 2025

Focused on the most pressing species located within ASA's service area;

Washington and Rensselaer counties

Please Read: *This document aims to provide information on invasive species management as a starting point for landowners. It is not all inclusive and requires outside resources if you want guidance on potentially removing them yourself.*

Resources on who to contact to discuss removal are located at the end of this document*. This is for educational purposes and to provide general information.*

The USGS (United States Geological Survey) definition of an invasive species is as follows;

"An invasive species is an **introduced**, **nonnative organism (disease, parasite, plant, or animal)** that begins to **spread** or expand its range from the site of its original introduction and that has the **potential to cause harm** to the environment, the economy, or to human health."

Remember, not all non-native organisms are invasive however. This depends on if they spread aggressively and pose a threat in some way.

Environmental Impacts;

- Biodiversity loss in wetlands, water bodies, edges & banks of streams/rivers.
- Habitat degradation
- Soil erosion especially on banks of streams/rivers.
- Decreased water quality in streams and rivers
- Effects on human/wildlife health

Economic Impacts;

- Impedes recreational activities
- Decreased land values
- Cost of treatment

The listed species are either prohibited or regulated by the NY DEC.

-Biocontrols are available for certain invasive species, however, professionals and the DEC are the only personnel allowed to implement these controls.

-For all herbicide applications, you must follow label instructions and comply with state regulations.

-Some of the suggested herbicides are for professional applicators only. Depending on the situation, professionals must be the applicators.

-Check the EPA's RUP (Restricted Use Products) list on their website before attempting to purchase and apply certain herbicides which may be regulated in some states/areas. The link to EPA's RUP list is below.

https://www.epa.gov/pesticide-worker-safety/restricted-use-products-rup-report

Water Chestnut

Prevention	
-Prevent seeding out; it is an annual so infestations can be prevented this way -Seed pods cling to undersides of watercraft, boat trailers and fishing gear so be sure to clean your gear before leaving waterway to prevent spread to other areas	
Eradication/Containment depending on the infestation size	**Effective Herbicide**
-Hand-pulling rosettes when they first appear before seeds develop (mid-June to early July) Dispose of properly. (Bag and leave in sun and then dispose into landfill, burn, dry and use in compost far from water) -Harvesting machines can be used as long as invasive species like Milfoil which reproduces through fragments is not present. Repeat harvest until seed bank is exhausted. - Herbicide; Must be applied by licensed applicator or someone with proper permits	-Florpyrauxifen-benzyl, imazomox, 2,4-D and glyphosate (glyphosate works but the others are recommended due to its toxicity to aquatic life) -Must be applied by professionals

Water Chestnut Photos

Figure 1: Shizhao, via Wikimedia Commons

Figure 2: Krzysztof Ziarnek, Kenraiz, via Wikimedia Commons

Figure 3: Travus~commonswiki assumed (based on copyright claims), via Wikimedia Commons

Eurasian Water Milfoil

Prevention	
-Clean boats, barges, harvesters, equipment, etc, since it is mainly spread overland to other water bodies. Make sure to rinse and allow objects to dry completely before entering another water body.	
Eradication/Containment depending on the infestation size	**Effective Herbicide**
-Mechanical harvesting through rakes, hand pulling or with harvesters is common and can be done multiple times throughout the growing season. Avoid breaking off fragments as these can grow into new plants if washed away. -Opaque water fabric can also be used to cover beds of milfoil, therefore blocking the light. -Harvested plants can be burned, buried composted or disposed of in landfills. -Herbicides can be applied to large stands but areas with unmanageable stands cannot use this method.	-Amine formulations of 2,4-D granules are effective and will not damage most non-target grasses. -Liquid triclopyr can control milfoil without damages to cattails and grasses. Contact professionals for application

Eurasian Water Milfoil Photos

Figure 4: Laval University, via Wikimedia Commons

Figure 5: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org, via Wikimedia Commons

Hydrilla

Prevention	
-Clean all equipment and objects that come in contact with waterbodies. -Drain water from equipment, boats and motors. -Dry anything that comes in contact with water -Never release fish or plants into a different water body than they came out of	
Eradication/Containment depending on the infestation size	**Effective Herbicide**
-Herbicide is typically used compared to mechanical methods -Requires several applications of herbicides throughout the growing season, typically for multiple years	-Effective herbicides that are "excellent controls" are; Bispyribac (Tradewind), Fluoridone (Sonar, Avast, WhiteCap, Restore, Fluoridone), and Penoxsulam (Galleon) Contact professionals for application

Hydrilla Photos

Figure 6: Yercaud-elango, via Wikimedia Commons

Figure 7: Krishna satya 333, via Wikimedia Commons

Purple Loosestrife

Prevention
-Clean equipment, boots and other items after hiking through areas with Purple Loosestrife or working in ditches etc, which can help decrease the spread of the seeds -Do not plant for ornamental purposes

Eradication/Containment depending on the infestation size	Effective Herbicide
-Hand pull small infestations of up to 100 plants. Remove all of root crown and remove the stems from the area and properly dispose or they will resprout and regrow from the stems. Pull plants before they flower out to avoid scattering seeds. -Herbicides can be used for large infestations (over 100 plants and up to 3 acres) Larger infestations are not currently controllable and efforts focus on containment of these areas instead.	-Roundup can be used in terrestrial environments -Rodeo can be used in wetland and aquatic environments (Read all labels; some sites may require licensed applicators to apply the herbicide)

Extra Info
Produces 300,000 seeds per plant (or more) annually

Purple Loosestrife Photos

Figure 8: Photo courtesy of Kordy K. Photography with ASA

Figure 9: Photo courtesy of Kordy K. Photography with ASA

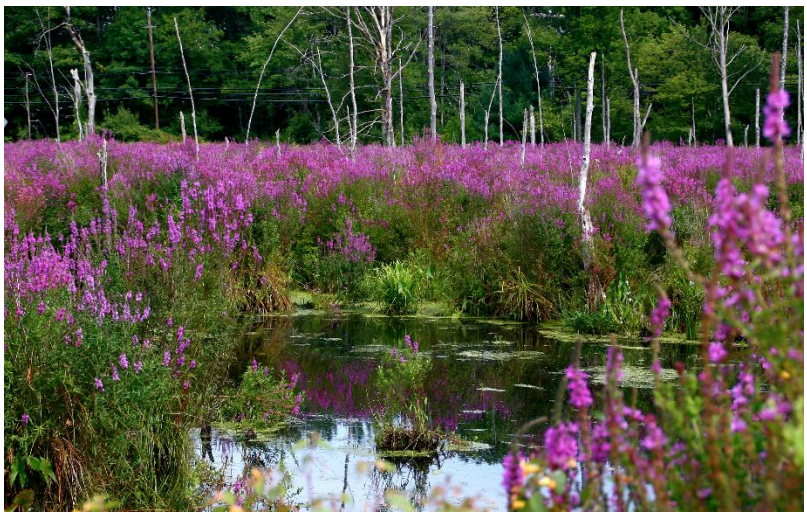

Figure 10: Liz west, via Wikimedia Commons

Common Reed
(Common name Phragmites)

Prevention	
-Do not introduce to new areas	
Eradication/Containment depending on the infestation size	**Effective Herbicide**
-Herbicide treatment is most effective through foliar applications. -Cut stump methods have also shown to be effective for small infestations. This can be done from mid-summer until fall. Cut below lowest leaf and apply 25% glyphosate solution to the stem and around cut edge. If near water, use glyphosate solution that is approved for aquatic use. -Mowing and burning can work if integrated with herbicide treatments afterwards.	- Foliar herbicides; Imazapyr and glyphosate either alone or in combination. Herbicide treatment can be done June to September when plants are actively growing.
Extra Info	
They spread vigorously through stolons and underground rhizomes so mechanical controls alone will not be effective -Make sure to properly distinguish between the native and invasive Common Reed before eradicating. The Native Reed has certain characteristics different than the invasive version.	

Common Reed Photos

Figure 11: Photo courtesy of Kordy K. Photography with ASA

Figure 12: Photo courtesy of Kordy K. Photography with ASA

Mugwort

Prevention	
-Try to not transport seeds or rhizome fragments anywhere	
Eradication/Containment depending on the infestation size	**Effective Herbicide**
-Pulling is ineffective due to extensive rhizome system -Mowing is also virtually ineffective even over a number of years -Repeated cultivation on agricultural land can work due to its shallow roots but this risks spreading root fragments elsewhere. -Chemical control has limited effectiveness. -Smothering has been proven effective for small infestations	-Glyphosate or dicamba can control Mugwort but full suppression is not always economical.

Mugwort Photos

Figure 13: Mugwort in Brighton Wild Park by Patrick Roper, via Wikimedia Commons

Figure 14: MarvinBikolano, via Wikimedia Commons

Local Professional Assistance

These are organizations that you can reach out to for specific advice on your project or land management.

Capital Region PRISM Contact Information
(Partnership for Regional Invasive Species Management)
capitalregionprism@cornell.edu
518.885.8995 (ext. 2218)

DEC Invasive Species Department
DLF, Bureau of Invasive Species and Ecosystem Health
625 Broadway
Albany, NY 12233
Phone**: 518-402-9425**
isinfo@dec.ny.gov

USDA Soil and Water for Washington County NY
District manager email: corrina.aldrich@ny.nacdnet.net
Washington County SWCD, USDA Service Center, 2530 St Rt 40, Greenwich, NY 12834
Phone: 518-692-9940 ext.5

USDA Soil and Water for Rensselaer County NY
USDA Service Center
1612 NY-7, Troy, NY 12180
Phone: (518) 271-1740 Extension 3
District manager email: Megan.Myers.RenscoSWCD@gmail.com

References

-Missouri Department of Conservation: https://mdc.mo.gov/trees-plants/invasive-plants

-DEC Aquatic Invasive Species; https://dec.ny.gov/nature/invasive-species/aquatic

-New York Invasive Species Information; https://nyis.info/species/purple-loosestrife/#:~:text=Four%20species%20beetles%20(2%20leaf%20beetles%20and,The%20leaf%2Dfeeding%20beetles%20Galerucella%20calmariensis%20and%20G.